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(71) Applicants (for all designated States except US): NEX-CODE SYSTEM CO. LTD. [KR/KR]; #502 Dongho Bldg., 268-6 Seohyun-dong, Boondang-gu, Seongnan-shi, 463-824 Gyeonggi-do (KR). SUNBUILD CO. LTD. [JP/JP]; DS Bldg. 3F, 5-15-5 Sendagaya, Shibuya-Ku, Tokyo, Tokyo 151-0051 (JP). LEE, Deuk-Yu [KR/KR]; 1a-812 Samho-Garden-4-Apartment, 30-18 Banpo1-dong, Seocho-gu, 137-761 Seoul (KR).

(71) Applicant and  
(72) Inventor: KUMAI, Michio [JP/JP]; 2-14-12, Kugenuma-matsugaoka, Fujisawa-City, Kanagawa 251-0038 (JP).

(72) Inventor; and  
(75) Inventor/Applicant (for US only): SOHN, Jung-Chul [KR/KR]; 5-205 Sindonga-Apartment, 20 Yangpyeong1-dong, Youngdeung-gu, 150-100 Seoul (KR).

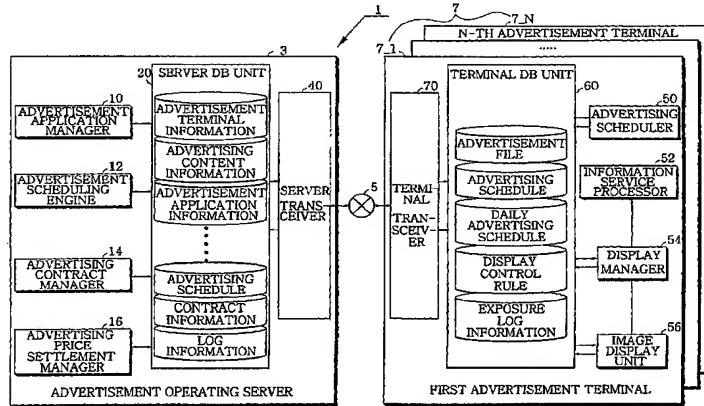
(74) Agent: PARK, Young-Il; HYUNDAI Life Insurance BLDG., 5F, 649-14 Yoksam\_dong, Gangnam\_gu, 135-080 Seoul (KR).

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*[Continued on next page]*

(54) Title: CHARACTERISTIC-OF-PLACE BASED ADVERTISEMENT SYSTEM USING WIDE AREA NETWORK AND OPERATING METHOD THEREOF



(57) Abstract: A characteristic-of-place based advertisement system includes an advertisement operating server selecting advertisement terminals in accordance with an advertiser's advertisement application including a characteristic of place, making an advertising schedule according to a total number of exposures of an advertisement desired by the advertiser, transmitting it together with an advertisement file input by the advertiser to each advertisement terminal, and comparing a planned number of exposures according to the advertising schedule with log information received from each advertisement terminal so as to settle an account; one or more advertisement terminals receiving and storing an advertisement file and an advertising schedule from the advertisement operating server, making a daily advertising schedule, providing the advertisement according to the daily advertising schedule or service information received through Internet to a user or permits an interrupt to allow the user to perform an information process or search according to a terminal display control rule, and transmitting the result of the exposure as log information to the advertisement operating server; and a wide area network connecting the advertisement operating server to each advertisement terminal.

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**CHARACTERISTIC-OF-PLACE BASED ADVERTISEMENT SYSTEM  
USING WIDE AREA NETWORK AND OPERATING METHOD  
THEREOF**

5    **Technical Field**

The present invention relates to an advertisement system using a network, and more particularly, to a characteristic-of-place based advertisement system, in which one or more advertisement terminals exclusively showing advertisements are connected to a central system 10 through a wired/wireless wide area network, the advertisement terminals are defined by characteristic information on their installation places, positions, or areas (hereinafter, referred to as a "characteristic of place"), a means for allowing advertisers to elaborately target an advertising area using the characteristic of place in order to promote products or services 15 and a means for guaranteeing the number of exposures of an advertisement contracted with an advertiser are provided, and the advertisement terminals are operated by the central system; and an operating method thereof.

20    **Background Art**

With the development of information technology, advertising means totally different from those used in the past have been introduced. An advertising means based on a network is one of them. At present, many advertisements are provided through a wide area common network 25 such as Internet. Banner advertisements inserted into an Internet home page or advertisements using digital moving pictures are examples of the advertising means based on a network.

A problem of such conventional advertising means based on a network is that they cannot reflect a characteristic of places, positions, or 30 areas where terminals exposing advertisements are installed, that is, a characteristic of place, and thus cannot satisfactorily provide effective means for determining a target area of the advertisements. For

example, when a car dealer in a particular area decides to put an advertisement in order to boost stagnant sales in that area, he/she will consider to put an advertisement in that area first rather than to put an advertisement throughout the nation or in many areas, taking into  
5 account an advertising effect and an advertising cost. In order to increase an advertising effect and decrease an advertising cost, it is necessary to concentrate an advertisement in a place where customers to buy cars crowd or where a car advertisement interests people, such as a place where used car dealers cluster together or a place where the car  
10 dealer is positioned. In another example, when advertising cosmetics targeting women, it will be more effective in cosmetic sales places or beauty shops than in other places.

Another problem of the conventional advertising means based on a network is that they do not have a means for guaranteeing the execution of an advertising contract made between an advertisement agency and an advertiser. For example, the conventional advertising means based on a network expose an advertisement to a terminal user only when the terminal user voluntarily accesses a particular home page. In other words, since a central system of an advertisement agency does  
15 not have a right to operate terminals exposing an advertisement, fulfillment of a predetermined number of exposures of an advertisement on a terminal during a predetermined period completely depends on terminal user's voluntary access to a particular home page connected to the central system of the advertisement agency.  
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#### Disclosure of the Invention

The present invention provides a characteristic-of-place based advertisement system which provides an efficient advertising medium on a network and a means for allowing an advertiser to elaborately target an advertising area, thereby increasing an advertising effect and decreasing an advertising cost, and which can guarantee the number of exposures  
30

of an advertisement contracted between an advertisement agency and an advertiser, and an operating method thereof.

According to an aspect of the present invention, there is provide a characteristic-of-place based advertisement system including an advertisement operating server, which is connected to one or more advertisement terminals through a wide area network, selects advertisement terminals in accordance with an advertiser's advertisement application including a characteristic of place among the one or more advertisement terminals, makes an advertising schedule for each selected advertisement terminal according to a total number of exposures of an advertisement desired by the advertiser, transmits an advertisement file input by the advertiser and the advertising schedule to each selected advertisement terminal, and compares a planned number of exposures according to the advertising schedule with log information received from each advertisement terminal having exposed the advertisement so as to settle an account; one or more advertisement terminals, each of which receives and stores an advertisement file and an advertising schedule from the advertisement operating server, makes a daily advertising schedule at a predetermined instant of time every day, provides the advertisement scheduled to be exposed according to the daily advertising schedule or service information received through Internet to a user or permits an interrupt to allow the user to perform an information process or search according to a terminal display control rule which is dynamically determined by comparing a system's remaining time with a time taken for an exposure of the advertisement, and transmits the result of the exposure of the advertisement as log information to the advertisement operating server; and a wide area network, which connects the advertisement operating server to the one or more advertisement terminals and allows data transmission therebetween.

Preferably, each advertisement terminal includes a terminal database unit, which stores and manages various type of information of

the advertisement terminal; a terminal transceiver, which receives an advertising schedule from the advertisement operating server, stores the advertising schedule in the terminal database unit, requests and receives an advertisement file from the advertisement operating server, stores the 5 advertisement file in the terminal database unit, transmits log information stored in the terminal database unit to the advertisement operating server, and receives service information through the Internet; an advertising scheduler, which transmits an advertisement file request to the advertisement operating server via the terminal transceiver when an 10 advertisement file corresponding to an advertising schedule stored in the terminal database unit does not exist in the terminal database unit, makes a daily advertising schedule for advertisements scheduled to be exposed on each day at the predetermined instant of time every day, and stores the daily advertising schedule in the terminal database unit; a 15 display manager, which provides an advertisement scheduled to be exposed according to the daily advertising schedule or service information received through the terminal transceiver to a user or permits an interrupt to allow the user to perform an information process or search according to the terminal display control rule which is dynamically 20 determined by comparing the system's remaining time with the time taken for an exposure of the advertisement; and an image display unit, which displays a content according to a control of the display manager and stores the log information as the result of exposing an advertisement in the terminal database unit.

25 According to another aspect of the present invention, there is provided an operating method of an advertisement system having a structure in which an advertisement operating server is connected to one or more advertisement terminals through a wide area network. The operating method includes step (a) in which the advertisement operating 30 server receives an advertisement application including a characteristic of place, an advertising term, a total number of exposures of an

advertisement, and a minimum number of exposures of the advertisement on each terminal from an advertiser and registers and stores an advertisement file input by the advertiser when the advertisement application is for a new advertising content; step (b) in 5 which the advertisement operating server selects advertisement terminals corresponding to the characteristic of place included in the advertisement application and makes a schedule by allocating at least minimum number of exposures to each advertisement terminal available during the advertising term among the selected advertisement terminals; 10 step (c) in which the advertisement operating server estimates an advertising price based on content of the advertising schedule and receives information regarding an actual contract from the advertiser; step (d) in which the advertisement operating server transmits an advertising schedule corresponding to an advertisement application, for 15 which a contract is completed, to an advertisement terminal selected according to the advertisement application and transmits an advertisement file requested by a particular advertisement terminal to the particular advertisement terminal; step (e) in which each advertisement terminal makes a daily advertising schedule for advertisements 20 scheduled to be exposed on each day at a predetermined instant of time every day; and step (f) in which each advertisement terminal provides an advertisement scheduled to be exposed according to the daily advertising schedule or service information received through a terminal transceiver to a user or permits an interrupt to allow the user to perform 25 an information process or search according to a terminal display control rule which is dynamically determined by comparing a system's remaining time with a time taken for an exposure of the advertisement

Preferably, the operating method further includes step (g) in which 30 each advertisement terminal transmits log information as the result of exposing an advertisement to the advertisement operating server; and step (h) in which the advertisement operating server generates result

information of settlement by comparing planned number of exposures according to the advertising schedule with the log information which is received from each advertisement terminal having exposed the advertisement.

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#### Brief Description of the Drawings

FIG. 1 is a block diagram of an entire advertisement system using a wide area network, according to the present invention.

10 FIG. 2 illustrates controls of and data flows among elements of an advertisement operating server according to the present invention.

FIGS. 3A and 3B show in detail an operation of an advertisement application manager of the advertisement operating server according to the present invention.

15 FIGS. 4A and 4B show in detail an operation of an advertisement scheduling engine of the advertisement operating server according to the present invention.

FIGS. 5A and 5B show in detail an operation of an advertising contract manager of the advertisement operating server according to the present invention.

20 FIG. 6 shows an operation of a server transceiver of the advertisement operating server according to the present invention.

FIG. 7 shows an operation of a settlement information manager of the advertisement operating server according to the present invention.

25 FIG. 8 illustrates controls of and data flows among elements of an advertisement terminal according to the present invention.

FIG. 9 shows an operation of an advertising scheduler of the advertisement terminal according to the present invention.

FIG. 10 shows an operation of a display manager of the advertisement terminal according to the present invention.

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#### Best mode for carrying out the Invention

Hereinafter, embodiments of the present invention will be described in detail with reference to the attached drawings.

FIG. 1 is a block diagram of an entire advertisement system 1 using a wide area network, according to the present invention.

5 Referring to FIG. 1, the advertisement system 1 includes an advertisement operating server 3, one or more advertisement terminal 7\_1 through 7\_N, and a wide area network 5 which connects the advertisement operating server 3 to the one or more advertisement terminal 7\_1 through 7\_N so that data can be transmitted.

10 The advertisement operating server 3 includes an advertisement application manager 10, an advertisement scheduling engine 12, an advertising contract manager 14, an advertising price settlement manager 16, a server database (DB) unit 20, and a server transceiver 40. These elements can be implemented by combining a universal computer 15 with software operating on the universal computer.

Each of the one or more advertisement terminals 7\_1 through 7\_N includes an advertising scheduler 50, an information service processor 52, a display manager 54, an image display unit 56, a terminal DB unit 60, and a terminal transceiver 70. These elements can also be 20 implemented by combining a hardware system, such as a personal computer or a television having an information processing function, with software operating on the hardware system.

FIG. 2 illustrates controls of and data flows among elements of the advertisement operating server 3 according to the present invention.

25 The server DB unit 20 stores and manages various types of information of the advertisement operating server 3. The server DB unit 20 includes a terminal characteristic-of-place information DB 21, an advertising content information DB 22, an advertisement deliberation rule DB 23, an advertisement terminal information DB 24, an advertiser information DB 30 25, an advertising unit price information DB 26, an advertisement application information DB 27, an advertising schedule DB 28, a contract

information DB 29, a log information DB 31, and a settlement information DB 32. In Tables 1 through 14, fields constituting each DB will be described.

Table 1

## 5 Terminal characteristic-of-place information DB 21

Data items	Description
Characteristic-of-place code (21_01)	First level code (two-digit alphanumeric) + Second level code (two-digit alphanumeric) + third level code (two-digit alphanumeric)
Characteristic-of-place name (21_02)	Title expressing the characteristic of place
Level (21_03)	First level, Second level, Third level
Age group (21_03)	Below ten, Tens, Early twenties, Late twenties, Thirties, Forties, Fifties, Sixties, Seventies and above
Sex (21_05)	Male, Female, Male and female
Characteristic-of-place description (21_06)	Detailed description of the characteristic of place
Rating (21_07)	Rating of an advertisement permitted to be exposed on an advertisement terminal having a particular characteristic of place (0-th ranting: only advertisement rated 0 can be exposed, 1st rating: advertisement rated 0 and 1 can be exposed, 2nd rating: advertisement rated 0, 1, and 2 can be exposed)

Table 2

## Examples of terminal characteristic-of-place information

Data items	Example of first level	First example of second level	First example of third level	Second example of second level	Second example of third level
Characteristic-of-place code	100000	101000	101010	102000	102010
Characteristic-of-place name	School	Women's school	Women's university	Men's school	Men's high school
Level	1	2	3	2	3
Age group			20		10
Sex		Female	Female	Male	Male
Characteristic-of-place description	School	Women's school	Women's university	Men's school	Men's high school
Rating	0	0	2	0	1

**Table 3**  
**Advertising content information DB 22**

Data items	Description
Advertisement ID (22_01)	Serial number of advertisement
Advertisement product code (22_02)	Code of product to be advertised
Advertisement name (22_03)	Name of advertisement made by client
Running time (22_04)	Running time (in unit of second) of registered advertisement
Advertiser ID (22_05)	ID of advertiser of the registered advertisement
Deliberation result (22_06)	Result of deliberating the registered advertisement (accepted/rejected)
Deliberation code 1 (22_07)	Indicates a degree of sensation
Deliberation code 2 (22_08)	Indicates a degree of body exposure
Deliberation code 3 (22_09)	Indicates a degree of speech
Deliberation code 4 (22_10)	Indicates a degree of violence
Deliberation code 5 (22_11)	Indicates a degree of injustice, exaggeration, or illegality
Rating (22_12)	Rated according to the deliberation code
Description of deliberation result (22_13)	The reason of rejection

**Table 4**  
**Advertisement deliberation rule DB 23**

Data items	Description
Deliberation category (23_01)	5 categories
Deliberation code (23_02)	Two digits
Deliberation code name (23_03)	Name expressing a deliberation code
Detailed description of deliberation code (23_04)	Detailed description of the deliberation code
Rating (23_05)	Rating according to the deliberating code

**Table 5**  
**Advertisement terminal information DB 24**

Data items	Description
Terminal ID (24_01)	ID identifying an advertisement terminal
District code (24_02)	Zip code of a place where advertisement terminal is located is used as the district code.
Characteristic-of-place code (24_03)	Indicates the characteristic of the place where advertisement terminal is located. A plurality of characteristic-of-place codes can be registered.

Rating (24_04)	Rating according to the characteristic-of-place code of the advertisement terminal
Place grade code (24_05)	Grade of the place where the advertisement terminal is located (Big city/Small town/Farm village)
Display type (24_06)	PDP40"/PDP60"/LCD15"/LCD12"/TV
Restricted company (24_07)	Indicates a company which cannot be advertised using the advertisement terminal. A plurality of companies can be registered.
Restricted product code 2 (24_08)	Indicates a code of a product which cannot be advertised using the advertisement terminal. A plurality of product codes can be registered.

Table 6

## Advertiser information DB 25

Data items	Description
Advertiser ID (25_01)	Log-in ID needed to use an advertisement system
Password (25_02)	Password needed to use the advertisement system
Client name (25_03)	Name of a client
Company name (25_04)	Name of company to which the client belongs
Address (25_05)	Detailed address of the client
E-mail (25_06)	E-mail address of the client

5

Table 7

## Advertising unit price information DB 26

Data items	Description
Unit price code (26_01)	Unit price codes are grouped into large categories and small categories. Large categories are basic unit price, client grade, display type, advertising content size, term grade, and place grade. Small categories are first through fifth grades.
Unit price (26_02)	Basic unit price
Application rate (26_03)	Rate applied according to unit price code
Application date (26_04)	Beginning date on which unit price is applied
Description of unit price (26_05)	Detailed description of unit price

Table 8

## Examples of advertisement unit price information

Data items	Example of basic unit price	Example of client grade	Example of place grade

Unit price code	1000	2010	3020
Unit price	100	1	1
Application rate	1	0.95	0.97
Application date	04/09/2002	04/09/2002	04/09/2002
Description of unit price	Per one exposure of 15-second advertisement	Client grade is A	Place grade is B

Table 9  
Advertisement application information DB 27

Data items	Description
Application number (27_01)	Serial number of Application
Application date (27_02)	Date on which an advertisement is applied
Advertisement ID (27_03)	Selected by client
Advertiser ID (27_04)	ID of advertiser registering the advertisement
Total advertising price (27_05)	Limit of total advertising price according to advertisement budget and advertisement plan
Total number of accounts (27_06)	Limit of total number of accounts according to advertisement budget and advertisement plan
Number of accounts per terminal (27_07)	Number of accounts for which advertisement is exposed on each terminal
Advertisement beginning date (27_08)	Date on which exposure of advertisement begins
Advertisement end date (27_09)	Date on which exposure of advertisement ends
District code (27_10)	Selection of terminal according to district
Characteristic-of-place code (27_11)	Advertisement terminal having a characteristic of place corresponding this code is selected
Application state (27_12)	Information on stages from advertiser's application through making a contract (Standby for deliberation/Rejected in deliberation/Standby for scheduling/Under scheduling/Completion of scheduling/Scheduling fail/Estimation/Contract/Termination of contract/Cancel of contract/Cancel of application)

5  
Table 10  
Advertising schedule DB 28

Data items	Description
Terminal ID (28_01)	
Exposure date (28_02)	Date on which advertisement is to be exposed

Application number (28_03)	Application number for which advertising price is estimated
Schedule fix (28_04)	Indicates whether a schedule is fixed or reserved. This data is registered to indicate that a schedule is fixed when contract is made. Only a fixed schedule can be transmitted to an advertisement terminal.
Number of exposures_contract (28_05)	Number of exposures on each contracted advertisement terminal on each date

Table 11

## Contract information DB 29

Data items	Description
Estimation number (29_01)	Serial number of estimation
Application number (29_02)	Application number of an advertisement on which contract or estimation is requested
Estimation date (29_03)	Advertisement system date on which estimation data is generated
Advertiser ID (29_04)	ID identifying an advertiser
Total number of accounts (29_05)	Total number of scheduled accounts
Advertising price (29_06)	Sum of unit prices for scheduled accounts
Contract number (29_07)	Automatically generated (registered when contract is made)
Contract date (29_08)	Date on which contract is made (registered when contract is made)
Contract price (29_09)	Price fixed in contract (registered when contract is made)
Contract prepayment amount (29_10)	Calculated by referring to prepayment rate according to client grade and performing an operation of the prepayment rate and supply price (registered when contract is made)
Prepayment date (29_11)	Date on which contract prepayment amount is to be paid (registered when contract is made)

5

Table 12

## Contract details DB 30

Data items	Description
Estimation number (30_01)	
Serial number (30_02)	Serial number identifying a detail of each estimation
Place grade (30_03)	Grade of place of advertisement terminal
Display type (30_04)	Display type of advertisement terminal

Number of exposures_contract (30_05)	Sum of contracted number of exposures according to the place grade and the display type
Price (30_06)	Price for the sum of contracted number of exposures according to the place grade and the display type

Table 13

## Log information DB 31

Data items	Description
Terminal ID (31_01)	ID of a terminal to which the schedule was transmitted
Exposure date (31_02)	Date on which the transmitted schedule is exposed
Application number (31_03)	Application number of the transmitted schedule
Exposure time zone (31_04)	Time zone (00 through 23) in which advertisement was exposed
Number of exposures_results (31_05)	Number of actual exposures of advertisement on terminal

5

Table 14

## Settlement information DB 32

Data items	Description
Advertiser ID (32_01)	ID of advertiser settling payment on each month
Contract number (32_02)	Contract number for which payment was settled
Application number (32_03)	Application number for which payment was settled
Exposure month (32_04)	Month for which payment was settled
Terminal ID (32_05)	ID of advertisement terminal on which advertisement was exposed
Number of exposures_contract (32_06)	Contracted number of exposures of scheduled advertisement
Number of exposures_results (32_07)	Actual number of exposures based on log information
Settlement amount (32_08)	Amount settled according to the actual number of exposures (Amount for each exposure month according to contract number)

Referring to FIG. 2, the advertisement application manager 10 provides the content of the terminal characteristic-of-place information 10 to an advertiser, receives an advertisement application including a characteristic of place, an advertising term, a total number of exposures of an advertisement, and a minimum number of exposures of the

advertisement on each terminal, and stores the advertisement application in the advertisement application information DB 27 (S200). Thereafter, when the application is for a new advertising content, the advertisement application manager 10 receives the new advertising content, stores it as  
5 an advertisement file, generates advertising content information regarding the advertisement file, and stores the advertising content information in the advertising content information DB 22 (S205). Next, the advertisement application manager 10 provides the advertisement file and the content of the advertisement deliberation rule DB 23 to an  
10 advertisement deliberator, receives the result of deliberation from the advertisement deliberator, and stores the result of deliberation in the advertising content information DB 22 (S210). Here, the advertisement application manager 10 may be separately provided with a web server (not shown) providing a user interface to an advertiser terminal (not  
15 shown) or a terminal (not shown) of the advertisement deliberator.

The advertisement scheduling engine 12 selects advertisement terminals corresponding to the characteristic of place included in the advertisement application stored in the advertisement application information DB 27, referring to the content of the advertising content information DB 22 and the advertisement terminal information DB 24 (S220). Next, the advertisement scheduling engine 12 makes a schedule, in which at least a minimum number of exposures is allocated to each advertisement terminal available during the advertising term among the selected advertisement terminals, and stores the schedule in  
20 the advertising schedule DB 28 (S225).  
25

The advertising contract manager 14 estimates an advertising price based on the content of the advertisement terminal information DB 24, the advertiser information DB 25, the advertising unit price information DB 26, the advertisement application information DB 27, and  
30 the advertising schedule DB 28 (S230). Next, if the advertiser approves the estimation (S235), information on the content of an actual contract

made with the advertiser is stored in the contract information DB 29 (S240).

The advertising price settlement manager 16 compares the contracted number of exposures according to the schedule stored in the advertising schedule DB 28 with content, which is received from each advertisement terminal having exposed an advertisement and stored in the log information DB 31, settles an account, and stores the result of settlement in the settlement information DB 32.

The server transceiver 40 transmits a schedule corresponding to an advertisement application for which a contract is completed by the advertising contract manager 14 to a relevant advertisement terminal, transmits an advertisement file requested by a particular advertisement terminal to the particular advertisement terminal, receives log information from an advertisement terminal having exposed an advertisement, and stores the log information in the log information DB 31.

FIGS. 3A and 3B show in detail an operation of the advertisement application manager 10 of the advertisement operating server 3 according to the present invention.

When making an application for an advertisement, an advertiser need to select advertisement terminals on which an advertisement is to be exposed. To support this selection, the advertisement application manager 10 can perform selection according to a district and selection according to characteristics of a place.

In order to select advertisement terminals according to a district, the advertisement application manager 10 receives one or more district codes (27\_10) selected by the advertiser (S300). The district codes (27\_10) are compared with a district code (24\_02) stored in the advertisement terminal information DB 24. Here, the district codes (27\_10) are selected to include all district codes (24\_02) allocated to target advertisement terminals.

In order to select advertisement terminals according to characteristics of a place where the advertisement terminals are located, the advertisement application manager 10 receives a characteristic-of-place code (27\_11) selected by the advertiser (S305).

5 For this selection, the advertisement application manager 10 reads the characteristic-of-place codes (27\_11) from the terminal characteristic-of-place information DB 21 and shows them to the advertiser. Then, the advertiser selects one or more characteristic-of-place codes (27\_11). The characteristic-of-place codes 10 (27\_11) are compared with characteristic-of-place codes (24\_03) stored in the advertisement terminal information DB 24 and need to be selected to include all characteristic-of-place codes (24\_03) allocated to the target advertisement terminals. The characteristic-of-place codes are used to use information obtained by analyzing that a highest advertising effect for 15 each type of product is achieved in a district having what characteristic of place based on information on the type of product. In an embodiment of the present invention, characteristic-of-place information is grouped into large categories such as lodging facilities, public facilities, financial facilities, educational facilities, commercial facilities, entertainment 20 facilities, transport-related facilities, religious facilities, beauty facilities, and athletic and health facilities. Region or location characteristics of a place, in which an advertisement terminal is installed, are defined in detail in medium or small categories. Tables 1 and 2 show a structure of fields in a DB storing characteristic-of-place information and examples 25 of values of the fields.

According to the above-described two selections according to a district and a characteristic of place, only advertisement terminals satisfying the two conditions (i.e., the result of an AND operation) are selected as target advertisement terminals. In other words, only 30 advertisement terminals having a particular characteristic of place in a particular district are selected as the target advertisement terminals.

For example, when an advertiser wants to advertise a Kyunggi-do small and medium enterprise's employment exhibition held in the Sungnam complex stadium, "Kyunggi-do" is selected as a district code, and "university" is selected as a characteristic-of-place code. Then, the 5 advertisement is exposed on only advertisement terminals having "university" as a characteristic of place in Kyunggi-do, Korea. This selection achieves a highest advertising effect.

After the district code (27\_10) and the characteristic-of-place code (27\_11) are selected, the advertisement application manager 10 receives 10 a term, while the advertisement is to be exposed, (i.e., an advertisement beginning date (27\_08) and an advertisement end date (27\_09)) input by the advertiser (S310) and receives a total advertising price (27\_05) estimated and input by the advertiser (S315). The total advertising price (27\_05) is used as a limit. In other words, an estimation exceeding the 15 total advertising price (27\_05) is not made. Next, the advertisement application manager 10 receives a total number of accounts (27\_06) input by the advertiser (S320). The total advertising price (27\_05) or the total number of accounts (27\_06) enables the advertiser to make an advertisement application based on an advertisement budget.

20 Here, in each "account," a predetermined number of exposures of the advertisement (i.e., the number of exposures determined per account by the advertisement system 1) are performed in a single advertisement terminal on a single day. For example, when the number of exposures per account is 150 and a basic running time of the advertisement is 15 25 seconds, if the advertiser applies for five accounts, the advertisement is exposed for  $750 \times 15$  seconds. Next, the advertisement application manager 10 receives a number of accounts per terminal (27\_07) input by the advertiser (S325). The number of accounts per terminal (27\_07) indicates a minimum number of accounts allocated to each 30 advertisement terminal when the advertisement is scheduled to be

exposed based on the total number of accounts (27\_06). The number of exposures can be efficiently distributed to the target advertisement terminals by using the total number of accounts (27\_06) and the number of accounts per terminal (27\_07). For example, when the advertisement 5 can be exposed on a large number of advertisement terminals by decreasing the number of accounts per terminal (27\_07), and the advertisement can be exposed on a small number of advertisement terminals by increasing the number of accounts per terminal (27\_07). In addition, the advertiser is guaranteed at least a predetermined number of 10 exposures on each advertisement terminal by inputting the number of accounts per terminal (27\_07).

Next, an advertising content to be exposed is registered. An advertising content registered in advance can be used, or a new advertising content can be registered and used. When the advertiser 15 selects use of a previously registered advertising content (S330), the advertisement application manager 10 provides previously registered advertising contents to the advertiser so that the advertiser can select one of them. The advertising content information DB 22 is referred to for the previously registered advertising contents.

20 When the advertiser selects a registration of a new advertising content (S330), the advertisement application manager 10 receives advertising content information input by the advertiser (S335). As shown in Table 3, the advertising content information DB 22 includes an advertisement name (22\_03), an advertisement product code (22\_02), 25 and a running time (22\_04). In step S335, the advertisement name (22\_03) and the running time (22\_04) are input. Next, the advertisement application manager 10 receives the advertisement product code (22\_02) input by the advertiser (S340). Thereafter, the advertisement application manager 10 is uploaded with an advertisement 30 file from the advertiser (S345) and stores to register the advertisement file in the advertising content information DB 22 (S350). Next, the

advertisement application manager 10 stores the advertisement application in the advertisement application information DB 27 and registers an application state (27\_12) as "standby for deliberation" in the advertisement application information DB 27 (S355). If the advertiser 5 selects an existing advertising content, a deliberation result (22\_06) (accepted or rejected) stored in the advertising content information DB 22 is registered in the application state (27\_12) in the advertisement application information DB 27.

FIG. 3B shows a procedure for deliberating a newly registered 10 advertising content. When the advertiser wants to use the new advertising content, the advertisement application manager 10 reports to an advertisement deliberator (a person having the right to deliberate) that there is a new advertisement content to be deliberated. Thereafter, if the advertisement deliberator requests the advertisement application 15 manager 10 to inquire about advertising contents to be deliberated, the advertisement application manager 10 inquires about data whose application state (27\_12) is set to "standby for deliberation" in the advertisement application information DB 27 and transmits the data to a terminal of the advertisement deliberator (S365). Then, the 20 advertisement deliberator selects an advertising content to be deliberated from advertising contents displayed on a screen of his/her terminal (S370).

When deliberating the selected advertising content, the 25 advertisement deliberator reviews detailed information on the advertising content, determines on appropriateness of the advertising content, and views the advertising content fetched from the advertising content information DB 22 and displayed on the screen by executing a preview function (S375). Deliberation of the advertising content can be performed under the support of the advertisement application manager 30 10 with reference to the advertisement deliberation rule DB 23 including a deliberation category (23\_01) and a deliberation code (23\_02). If the

advertisement deliberator selects the deliberation code (23\_02) with respect to each of the five deliberation categories (23\_01), the advertisement application manager 10 automatically determines the result of deliberation and a rating of the advertising content (S380).  
5 "Accepted" or "rejected" is input in a deliberation result (22\_06). When "rejected" is set as the deliberation result (22\_06), the reason of rejection is input in a description of deliberation result (22\_13). Thereafter, the advertisement application manager 10 stores the deliberation result (22\_06), a deliberation code 1 (22\_07), a deliberation code 2 (22\_08), a  
10 deliberation code 3 (22\_09), a deliberation code 4 (22\_10), a deliberation code 5 (22\_11), a rating (22\_12), and the description of deliberation result (22\_13) in the advertising content information DB 22 and reflects the deliberation result (22\_06) to the application state (27\_12) (S385).

FIGS. 4A and 4B show in detail an operation of the advertisement scheduling engine 12 of the advertisement operating server 3 according to the present invention.

The advertisement scheduling engine 12 can be largely divided into two sections: one section for selecting target advertisement terminals, and the other section for determining whether an advertisement can be  
20 scheduled to be exposed on each selected target advertisement terminal and making an advertising schedule.

In order to select target advertisement terminals, the advertisement scheduling engine 12 reads the advertisement application input by the advertiser from the advertisement application information DB  
25 27 and the advertising content information from the advertising content information DB 22 (S400). Here, reading is preformed on condition that the application state (27\_12) is set to "accepted" in the advertisement application information DB 27.

Next, target advertisement terminals are selected with respect to  
30 the advertisement application. More specifically, the district codes (24\_02) in the advertisement terminal information DB 24 are compared

with the district code (27\_10) in the advertisement application, advertisement terminals satisfying the conditions of the district code (27\_10) are selected, and relevant advertisement terminal information is stored in a first temporary terminal information DB 33 (having the same structure as the advertisement terminal information DB 24) (S405). Next, the characteristic-of-place codes (24\_03) in the first temporary terminal information DB 33 are compared with the characteristic-of-place code (27\_11) in the advertisement application, only advertisement terminals whose ratings (24\_04) in the first temporary terminal information DB 33 are equal to or greater than the rating (22\_12) in the advertising content information DB 22 are selected from advertisement terminals satisfying the conditions of the characteristic-of-place code (27\_11), and relevant advertisement terminal information is stored in a second temporary terminal information DB 34 (having the same structure as the advertisement terminal information DB 24) (S410). Next, restricted companies (24\_07) in the second temporary terminal information DB 34 are compared with a company name (25\_04) in the advertiser information DB 25, advertisement terminals satisfying the conditions of the company name (25\_04) are selected, and relevant advertisement terminal information is stored in a third temporary terminal information DB 35 (having the same structure as the advertisement terminal information DB 24) (S415). Next, restricted product codes (24\_08) in the third temporary terminal information DB 35 are compared with the advertisement product code (22\_02) in the advertising content information DB 22, advertisement terminals satisfying the conditions of the advertisement product code (22\_02) are selected, and relevant advertisement terminal information is stored in a fourth temporary terminal information DB 36 (having the same structure as the advertisement terminal information DB 24) (S420). During the above-described selection, advertisement terminals under installation or falling into disuse are excluded. After the target advertisement terminals

are selected, the advertisement scheduling engine 12 makes an advertising schedule.

FIG. 4B shows a procedure in which the advertisement scheduling engine 12 makes an advertising schedule. The fourth temporary terminal information DB 36 stores information on the target advertisement terminals selected through the above-described selection. The advertisement scheduling engine 12 separately processes information on each of the advertisement terminals stored in the fourth temporary terminal information DB 36 and makes an advertising schedule for each advertisement terminal.

It is determined whether advertisement terminal information to be processed exists (S425). Step S425 is a process of determining whether repetition which will be described below ends. If it is determined that no advertisement terminal information exists in step 15 S425, the advertisement scheduling engine 12 updates the application state (27\_12) in the advertisement application information DB 27 with "completion of scheduling" and terminates the operation of making an advertising schedule. If it is determined that advertisement terminal information to be processed exists in step S425, the advertisement scheduling engine 12 sets the advertisement beginning date (27\_08) as a calculation date (S430). Next step S435 is a process of determining whether a repetitive operation from the advertisement beginning date (27\_08) to the advertisement end date (27\_09) with respect to a certain advertisement terminal ends. In other words, when the calculation date 20 is greater than the advertisement end date (27\_09) in step S435, and processes for one advertisement terminal are terminated. Next, information on a next advertisement terminal is retrieved from the fourth temporary terminal information DB 36 (S440), and the operation goes back to step S425. When the calculation date is equal to or less than 25 the advertisement end date (27\_09), the advertisement scheduling engine 12 obtains an existing number of exposures (i.e., the registered 30

number of exposures on each advertisement terminal on each calculation date) using a terminal ID (28\_01) and an exposure date (28\_02) in the advertising schedule DB 28 (S445). Next, the advertisement scheduling engine 12 compares an available number of exposures on a current 5 advertisement terminal on each day, the existing number of exposures, and a planned number of exposures to determine whether the advertisement can be scheduled to be exposed on the current advertisement terminal (S450). Here, the planned number of exposures is obtained by multiplying the number of accounts per terminal (27\_07) in 10 the advertisement application by a predetermined number. It is determined that the advertisement can be scheduled to be exposed on the current advertisement terminal when the available number of exposures on each day is greater than the sum of the existing number of exposures and the planned number of exposures.

15 If it is determined that the advertisement can be scheduled to be exposed on the current advertisement terminal, an advertising schedule is made by storing the planned number of exposures, which is allocated to the current advertisement terminal per day, in the number of exposures\_contract (28\_05) and then added to the advertising schedule 20 DB 28 (S455). Next, the calculation date is increased by one (S460). Steps S435 through S460 are repeated from the advertisement beginning date (27\_08) to the advertisement end date (27\_09). When the repetition with respect to the advertisement end date (27\_09) ends, a next advertisement terminal is selected from the fourth temporary 25 terminal information DB 36, and steps S425 through 460 are repeated.

Although not shown in FIG. 4B, the repetition ends when an advertising price accumulated during repetition exceeds the total advertising price (27\_05) in the advertisement application or when the planned number of exposures accumulated during repetition exceeds a 30 value resulting from multiplication of the total number of accounts (27\_06) and the predetermined number. When no advertisement

terminal information to be processed exists, when the accumulated advertising price is less than the total advertising price (27\_05), and when the accumulated planned number of exposures is less than the value resulting from multiplication of the total number of accounts 5 (27\_06) and the predetermined number, the advertisement terminal information is read from the fourth temporary terminal information DB 36 all over again, and an advertising schedule is made.

When scheduling is completed with respect to all of the target advertisement terminals, the advertisement scheduling engine 12 10 updates the application state (27\_12) in the advertisement application information DB 27 with "completion of scheduling" (S465), and the operation ends.

FIGS. 5A and 5B show in detail an operation of the advertising contract manager 14 of the advertisement operating server 3 according 15 to the present invention.

FIG. 5A shows a procedure in which the advertising contract manager 14 estimates an advertising price. The advertising contract manager 14 estimate the advertising price based on advertising schedule information generated by the advertisement scheduling engine 12 and 20 determines the content of an estimation to be suggested to the advertiser. More specifically, the advertising contract manager 14 provides advertisement applications whose application state (27\_12) is "completion of scheduling" in the advertisement application information DB 27 to the advertiser so that the advertiser selects one as a target of 25 estimation (S500). When the target of estimation is selected, new contract information is added to the contract information DB 29. Among the fields included in the contract information DB 29, a contract number (29\_07) field, a contract date (29\_08) field, a contract price (29\_09) field, and a contract prepayment amount (29\_10) field are maintained empty 30 until the contract is approved. These fields are filled when the contract is approved. More specifically, the contracted number of exposures (i.e.,

the number of exposures\_contract (28\_05)) according to the place grade and the display type is calculated using an application number of the selected advertisement application as a key in the advertising schedule DB 28 and the advertisement terminal information DB 24 and is added to 5 the contract details DB 30 (S505).

Next, in order to calculate a price for the contracted number of exposures according to the place grade and the display type (S510), an application rate according to the place grade and an application rate according to the display type are obtained referring to the advertising unit 10 price information DB 26. The price (30\_06) for the contracted number of exposures according to the place grade and the display type is calculated using Formula (1).

Price (30\_06) for the contracted number of exposures according to 15 the place grade and the display type = contracted number of exposures (number of exposures\_contract (28\_05)) according to the place grade and the display type  $\times$  Basic unit price  $\times$  Application rate according to the place grade  $\times$  Application rate according to the display type ... (1)

20 In step S510, the advertising contract manager 14 updates the contract details DB 30 with the calculated price (30\_06). Thereafter, the advertising contract manager 14 calculates a total price for the selected advertisement. In order to calculate the total price for the selected advertisement, it is necessary to obtain an application rate according to a 25 term grade and an application rate according to an advertising content size. The application rate according to the term grade is obtained referring to the advertising unit price information DB 26 using an advertising term calculated based on the advertisement application information DB 27. The application rate according to the advertising content size is obtained referring to the advertising unit price information 30

DB 26 using the running time (22\_04) in the advertising content information DB 22. The total price for the selected advertisement is calculated according to Formula (2) using the obtained application rates (S515).

5

Total price = Sum of prices (30\_06) in the contract details DB (which have same estimation number (30\_01) in the contract details DB) × Application rate according to the term grade × Application rate according to the advertising content size ... (2)

10

The total price is recorded in the advertisement price (29\_06) of the contract information DB 29, and the application state (27\_12) is changed into "estimation" in the advertisement application information DB 27. Then, the estimation of an advertisement price ends.

15

After a discussion with an operation based on the estimated advertising price, if the advertiser approves the estimated advertising price, a procedure for making a contract is performed. FIG. 5B shows a procedure in which the advertising contract manager 14 makes a contract.

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It is necessary to select a target contract in order to make the contract. Accordingly, the advertising contract manager 14 provides information on contracts, for which the application state (27\_12) is set to "estimation" in the advertisement application information DB 27 and the contract date (29\_08) field is empty in the contract information DB 29 to the advertiser so that the advertiser selects one contract and receives the result of selection (S520). The advertising contract manager 14 receives additional contract information regarding the selected contract (S525). The additional contract information includes a contract price (29\_09), a contract prepayment amount (29\_10), and a prepayment date (29\_11) on which the advertiser agrees with the operator. Next, the

advertising contract manager 14 stores the additional contract information in the contract information DB 29 and changes the application state (27\_12) into "contract" in the advertisement application information DB 27 (S530). Then, the making of an advertising contact ends.

FIG. 6 shows an operation of the server transceiver 40 of the advertisement operating server 3 according to the present invention. The server transceiver 40 fetches an advertising schedule according to the advertising term with respect to the contracted application from the advertising schedule DB 28 using the exposure date (28\_02) and the terminal ID (28\_01) as keys (S605) and transmits the advertising schedule to an advertisement terminal (S605). The advertisement terminal analyzes the advertising schedule, and when it is determined that an advertising content which does not exist in the advertisement terminal is scheduled as the result of the analysis, the advertisement terminal transmits an advertising content request to the server transceiver 40 (S610). Then, the server transceiver 40 fetches the requested advertising content from the advertising content information DB 22 and transmits it to the advertisement terminal (S615). Thereafter, the advertisement terminal periodically transmits the results of exposing the advertising content, i.e., log information, to the advertisement operating server 3. The server transceiver 40 receives the log information and stores it in the log information DB 31 (S620).

An operation of the settlement information manager 16 of the advertisement operating server 3 according to the present invention will be described with reference to FIG. 7. Settlement of an advertising price is made on a predetermined date every month according to an advertiser and a contract. The settlement information manager 16 searches the contract information DB 29 for a contract including a settlement month using the advertiser ID and the settlement month (S700). Thereafter, the settlement information manager 16 extracts

schedule information (or plan information) from the advertising schedule DB 28 using the application number (29\_02) obtained from the searched contract and extracts result information from the log information DB 31 using the application number (28\_03), the terminal ID (28\_01), and the exposure date (28\_02), i.e., the settlement date, which are obtained from the extracted plan information (S705). The extracted information include the application number, the terminal ID, the planned number of exposures (i.e., the number of exposures\_contract (28\_05)), and the number of results (the number of exposures\_results (31\_05)). Next, the settlement information manager 16 obtains the application rate according to the place grade and the application rate according to the advertising content size from the advertising unit price DB 26 using the place grade code (24\_05) of the advertisement terminal information DB 24 and the running time (22\_04) of the advertising content information DB 22, and calculates a settlement amount (32\_08) using a formula (Application rate according to the place grade  $\times$  Application rate according to the advertising content size  $\times$  Basic unit price  $\times$  Number of results) (S710). Thereafter, the settlement information manager 16 stores the extracted information and the settlement amount in the settlement information DB 32 (S720).

FIG. 8 illustrates controls of and data flows among elements of an advertisement terminal according to the present invention.

A terminal DB unit 60 stores and manages various types of information of an advertisement terminal 7. The terminal DB unit 60 includes a terminal advertising schedule DB 61, a terminal advertisement file DB 62, a terminal daily advertising schedule DB 63, a terminal display control rule DB 64, and a terminal exposure log information DB 65. Tables 15 through 19 show fields constituting each DB.

Table 15

30 Terminal advertising schedule DB 61

Data items	Description
Exposure date (61_01)	Date on which advertisement is to be exposed
Application number (61_02)	Application number of an advertisement application made by an advertiser
Advertisement ID (61_03)	ID identifying an advertisement file
Number of exposures_contract (61_04)	Number of exposures on each date

Table 16

## Terminal advertisement file DB 62

Data items	Description
Advertisement ID (62_01)	Serial number of an advertisement (automatically generated)
Running time (62_02)	Period of time during which the advertisement is exposed (unit: seconds)
Advertisement file (62_03)	Actual advertisement data

5

Table 17

## Terminal daily advertising schedule DB 63

Data items	Description
Application number (63_01)	Application number of an advertisement application made by an advertiser
Advertisement ID (63_02)	ID identifying an advertisement file
Number of exposures_contract (63_03)	Number of exposures on a date

Table 18

## Terminal display control rule DB 64

Data items	Description
Information service permission state (64_01)	Indicates one of three states: normal, reduction, and suspension. During suspension, information service is not provided. During normal or reduction, advertisement is exposed for a predetermined period of time
Interrupt permission state (64_02)	Indicates one of three states: normal, reduction, and suspension. During suspension, interrupt is not allowed. During normal or reduction, interrupt is allowed for a predetermined period of time
Interrupt normal time (64_03)	Period of time allowed when interrupt permission state is normal (Basic value: 180 seconds)
Interrupt reduction time	Period of time allowed when interrupt permission state is

(64_04)	reduction (Basic value: 90 seconds)
Information service normal time (64_05)	Period of time allowed when information service permission state is normal (Basic value: 15 seconds)
Information service reduction time (64_06)	Period of time allowed when information service permission state is reduction (Basic value: 10 seconds)

Table 19

## Terminal exposure log information DB 65

Data items	Description
Exposure date (65_01)	Date on which an advertisement was exposed
Application number (65_02)	Application number
Exposure time zone (65_03)	Time zone (00 through 23) in which advertisement was exposed
Number of exposures_results (65_04)	Number of actual exposures of advertisement on the terminal

5 As shown in FIG. 8, the advertisement terminal 7 includes an advertising scheduler 50, an information service processor 52, a display manager 54, an image display unit 56, a terminal DB unit 60, and a terminal transceiver 70.

10 The terminal transceiver 70 is provided with a protocol engine (not shown) designed to transmit a data to and receive data from the advertisement operating server 3. The protocol engine analyzes and processes data received from the advertisement operating server 3 and stores the processed data in the terminal advertisement file DB 62 and the terminal advertising schedule DB 61. A terminal advertising 15 schedule received through the terminal transceiver 70 is for a duration predetermined by the advertisement operating server 3 and includes an advertisement ID (61\_03) identifying an advertisement, an exposure date (61\_01) on which the advertisement is to be exposed, and a planned number of exposures (number of exposures\_contract (61\_04)) on each 20 exposure date. Also, the terminal transceiver 70 downloads a desired document via a network 5, such as the Internet, at the request of the information service processor 52, which provides service information

(useful information, such as stock information, news, and weather report, provided during intervals between advertisements) to a user.

The information service processor 52 is controlled by the display manager 54 to transmit the downloaded document to the image display unit 56 so that the document is displayed on a screen.

In addition to showing advertisements and providing information, the advertisement terminal 7 according to the present invention can show web sites having useful information at the request of a user. More specifically, an interrupt occurs due to a user's particular action (for example, clicking a button), and the occurrence of interrupt is reported to the display manager 54. Then, the display manager 54 controls the image display unit 56 to display web site information. The display manager 54 can be restrictively operated according to the content of the display control rule DB 64 shown in Table 18.

When an advertisement or service information is exposed or when a web site is visited, image information is processed and displayed by the image display unit 56. The image display unit 56 displays an image only during a running time or a duration of visit to a web site, makes the result of display into log information, stores the log information in the terminal exposure log information DB 65, and then reports an end of an operation to the display manager 54. The image display unit 56 can suspend the display of an advertisement or service information or the visit to a web site according to the control of the display manager 54.

FIG. 9 shows an operation of the advertising scheduler 50 of the advertisement terminal 7 according to the present invention. The advertising scheduler 50 determines whether an advertisement file corresponding to the advertisement ID (61\_03) included in an advertising schedule, which is received through the terminal transceiver 70 and stored in the terminal advertising schedule DB 61, exists in the terminal advertisement file DB 62. If the advertisement file does not exist in the terminal advertisement file DB 62, the advertising scheduler 50 transmits

an advertisement file request to the advertisement operating server 3. The above-described operation is performed on all of newly received advertising schedules and includes determining whether a new advertising schedule is received (S900), determining whether an 5 advertisement file exists (S905), designating a next advertising schedule (S910), and transmitting an advertisement file request (S915).

In addition, the advertising scheduler 50 senses a change in a date of a timer 51, makes a daily advertising schedule used by the 10 display manager 54 every time when the date of the timer 51 changes, and stores the daily advertising schedule in the terminal daily advertising schedule DB 63.

FIG. 10 shows an operation of the display manager 54 of the advertisement terminal 7 according to the present invention. The display manager 54 mainly performs controls so as to normally display 15 an advertisement and service information and normally visit to a web site according to an interrupt. The most essential function of the display manager 54 is to simultaneously guarantee an execution of an advertisement contract and provide various services to a user.

When a running time ends in the image display unit 56, a display 20 termination process is performed (S950). In step S950, "exposure done" is recorded in a relevant field of the terminal daily advertising schedule DB 63. The display termination process is necessary to distinguish an advertisement that has not been exposed from an advertisement that has been exposed when the system is restarted 25 because a program or system was accidentally down. After the display termination process, an information service permission state is set and stored (S955), and an interrupt permission state is set and stored (S960), in order to make a display control rule. In step S955, a remaining time is compared with a time taken for an exposure of a remaining part of a 30 current advertisement to check whether there is time to provide an information service. If there is no time to provide the information service,

an information service permission state is set to "suspension" and then stored in the terminal display control rule DB 64. When though there is time to provide an information service, the time is less than a period of time predetermined by the system, the information service permission state is set to "reduction" and then stored in the terminal display control rule DB 64. When there is sufficient time to provide an information service, the information service permission state is set to "normal" and then stored in the terminal display control rule DB 64. Stored information regarding the information state is used to determine whether service information is displayed and to obtain a display time for the service information in step S965 in which a next display target is determined.

Similarly to step S955, the remaining time is compared with a time taken for an exposure of the remaining part of the current advertisement to check whether there is time to permit an interrupt. If there is no time to permit an interrupt, an interrupt permission state is set to "suspension" and then stored in the terminal display control rule DB 64. When though there is time to permit an interrupt, the permitted time is less than a period of time predetermined by the system, the interrupt permission state is set to "reduction" and then stored in the terminal display control rule DB 64. When there is sufficient time to permit an interrupt, the interrupt permission state is set to "normal" and then stored in the terminal display control rule DB 64. Stored information regarding the interrupt permission state is used to check the interrupt permission state in step S945 when an interrupt occurs in step S940.

Due to the display control rule, the contracted number of exposures can be guaranteed. After the display termination process is performed, the display manager 54 determines a next display target in step S965. When the display termination process was performed in response to an occurrence of an interrupt, the next display target is a web site. When the display termination process was performed

regardless of an occurrence of an interrupt, basically an advertisement and an information service are alternately selected. If it is now an information service's turn and the information service permission state in the terminal image control rule DB 64 is set to "normal" or "reduction," an 5 information service is selected as the next display target. If not, an advertisement is selected as the next display target. If an advertisement is selected as the next display target, the display manager 54 reads information from the terminal daily advertising schedule DB 63 and transmits it to the image display unit 56. Then, the image display unit 56 10 displays an advertisement corresponding to the information. When a running time of the advertisement ends, the image display unit 56 records the result of display (i.e., exposure) in the terminal exposure log information DB 65.

While this invention has been particularly shown and described 15 with reference to preferred embodiments thereof, it will be understood by those skilled in the art that various changes may be made therein without departing from the scope of the invention. Therefore, the above-described embodiments will be considered not in restrictive senses but in descriptive senses only. The scope of the invention will 20 be defined not by the above description but by the appended claims, and it will be construed that all differences made within the scope defined by the claims are included in the present invention.

#### Industrial Applicability

25 As described above, according to the present invention, an advertiser can elaborately target an advertising area, thereby increasing an advertising effect and decreasing an advertising cost.

In addition, an advertisement agency using a computer network 30 can guarantee an advertiser the contracted number of exposures of an advertisement, and therefore, the present invention can provide a more reliable advertising price settlement system.

What is claimed is:

1. A characteristic-of-place based advertisement system comprising:
  - 5 an advertisement operating server, which is connected to one or more advertisement terminals through a wide area network, selects advertisement terminals in accordance with an advertiser's advertisement application including a characteristic of place among the one or more advertisement terminals, makes an advertising schedule for each selected advertisement terminal according to a total number of exposures of an advertisement desired by the advertiser, transmits an advertisement file input by the advertiser and the advertising schedule to each selected advertisement terminal, and compares a planned number of exposures according to the advertising schedule with log information received from each advertisement terminal having exposed the advertisement so as to settle an account;
  - 10 one or more advertisement terminals, each of which receives and stores an advertisement file and an advertising schedule from the advertisement operating server, makes a daily advertising schedule at a predetermined instant of time every day, provides the advertisement scheduled to be exposed according to the daily advertising schedule or service information received through Internet to a user or permits an interrupt to allow the user to perform an information process or search according to a terminal display control rule which is dynamically determined by comparing a system's remaining time with a time taken for an exposure of the advertisement, and transmits the result of the exposure of the advertisement as log information to the advertisement operating server; and
  - 15 a wide area network, which connects the advertisement operating server to the one or more advertisement terminals and allows data transmission therebetween.

2. The characteristic-of-place based advertisement system of claim 1, wherein the advertisement operating server comprises:

- a server database unit, which stores and manages various types of information of the advertisement operating server;
- 5 an advertisement application manager, which receives an advertisement application including a characteristic of place, an advertising term, a total number of exposures of an advertisement, and a minimum number of exposures of the advertisement on each terminal from an advertiser, stores the advertisement application in the server database unit, and registers and stores an advertisement file input by the advertiser when the advertisement application is for a new advertising content;
- 10 an advertisement scheduling engine, which selects advertisement terminals corresponding to a characteristic of place included in an advertisement application stored in the server database unit, makes a schedule in which at least minimum number of exposures is allocated to each advertisement terminal available during an advertising term among the selected advertisement terminals, and stores the schedule in the server database unit;
- 15 an advertising contract manager, which estimates an advertising price based on content of an advertising schedule stored in the server database unit and stores information regarding an actual contract made with an advertiser in the server database unit;
- 20 an advertising price settlement manager, which compares planned number of exposures according to an advertising schedule stored in the server database unit with log information which is received from each advertisement terminal having exposed an advertisement so as to settle an account and stores the result of settlement in the server database unit; and
- 25 a server transceiver, which transmits an advertising schedule corresponding to an advertisement application, for which a contract is

completed, to an advertisement terminal selected according to the advertisement application, transmits an advertisement file requested by a particular advertisement terminal to the particular advertisement terminal, receives log information from an advertisement terminal having exposed 5 an advertisement, and stores the log information in the server database unit.

3. The characteristic-of-place based advertisement system of  
10 claim 2, wherein the advertisement application manager provides the advertisement file to a deliberator, receives the result of deliberation from the deliberator, and stores the result of deliberation in the server database unit.

4. The characteristic-of-place based advertisement system of  
15 claim 2, wherein the characteristic of place is divided into a plurality of hierarchical levels having an inclusion relation, each advertisement terminal is defined by a characteristic of place at a lowest level, and the advertisement application manager allows an advertiser to select at least one among all characteristics of place at lowest through highest levels.

20  
5. The characteristic-of-place based advertisement system of  
25 claim 2, wherein the advertisement scheduling engine repeats allocating at least the minimum number of exposures to each advertisement terminal available during the advertising term among the selected advertisement terminals, and terminates the repetition when an advertising price accumulated during the repetition exceeds a total advertising price included in an advertisement application input by an advertiser or when planned number of exposures accumulated during the repetition exceeds a total number of exposures.

6. The characteristic-of-place based advertisement system of claim 1, wherein each advertisement terminal comprises:

a terminal database unit, which stores and manages various type of information of the advertisement terminal;

5 a terminal transceiver, which receives an advertising schedule from the advertisement operating server, stores the advertising schedule in the terminal database unit, requests and receives an advertisement file from the advertisement operating server, stores the advertisement file in the terminal database unit, transmits log information stored in the terminal database unit to the advertisement operating server, and receives service information through the Internet;

10 an advertising scheduler, which transmits an advertisement file request to the advertisement operating server via the terminal transceiver when an advertisement file corresponding to an advertising schedule stored in the terminal database unit does not exist in the terminal database unit, makes a daily advertising schedule for advertisements scheduled to be exposed on each day at the predetermined instant of time every day, and stores the daily advertising schedule in the terminal database unit;

15 a display manager, which provides an advertisement scheduled to be exposed according to the daily advertising schedule or service information received through the terminal transceiver to a user or permits an interrupt to allow the user to perform an information process or search according to the terminal display control rule which is dynamically determined by comparing the system's remaining time with the time taken for an exposure of the advertisement; and

20 25 an image display unit, which displays content according to a control of the display manager and stores the log information as the result of exposing an advertisement in the terminal database unit.

7. A an operating method of an advertisement system having a structure in which an advertisement operating server is connected to one or more advertisement terminals through a wide area network, the operating method comprising:

5 step (a) in which the advertisement operating server receives an advertisement application including a characteristic of place, an advertising term, a total number of exposures of an advertisement, and a minimum number of exposures of the advertisement on each terminal from an advertiser and registers and stores an advertisement file input by

10 the advertiser when the advertisement application is for a new advertising content;

15 step (b) in which the advertisement operating server selects advertisement terminals corresponding to the characteristic of place included in the advertisement application and makes a schedule by allocating at least minimum number of exposures to each advertisement terminal available during the advertising term among the selected advertisement terminals;

20 step (c) in which the advertisement operating server estimates an advertising price based on content of the advertising schedule and receives information regarding an actual contract from the advertiser;

25 step (d) in which the advertisement operating server transmits an advertising schedule corresponding to an advertisement application, for which a contract is completed, to an advertisement terminal selected according to the advertisement application and transmits an advertisement file requested by a particular advertisement terminal to the particular advertisement terminal;

step (e) in which each advertisement terminal makes a daily advertising schedule for advertisements scheduled to be exposed on each day at a predetermined instant of time every day; and

30 step (f) in which each advertisement terminal provides an advertisement scheduled to be exposed according to the daily

advertising schedule or service information received through a terminal transceiver to a user or permits an interrupt to allow the user to perform an information process or search according to a terminal display control rule which is dynamically determined by comparing a system's remaining time with a time taken for an exposure of the advertisement

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8. The operating method of claim 7, further comprising:

10 step (g) in which each advertisement terminal transmits log information as the result of exposing an advertisement to the advertisement operating server; and

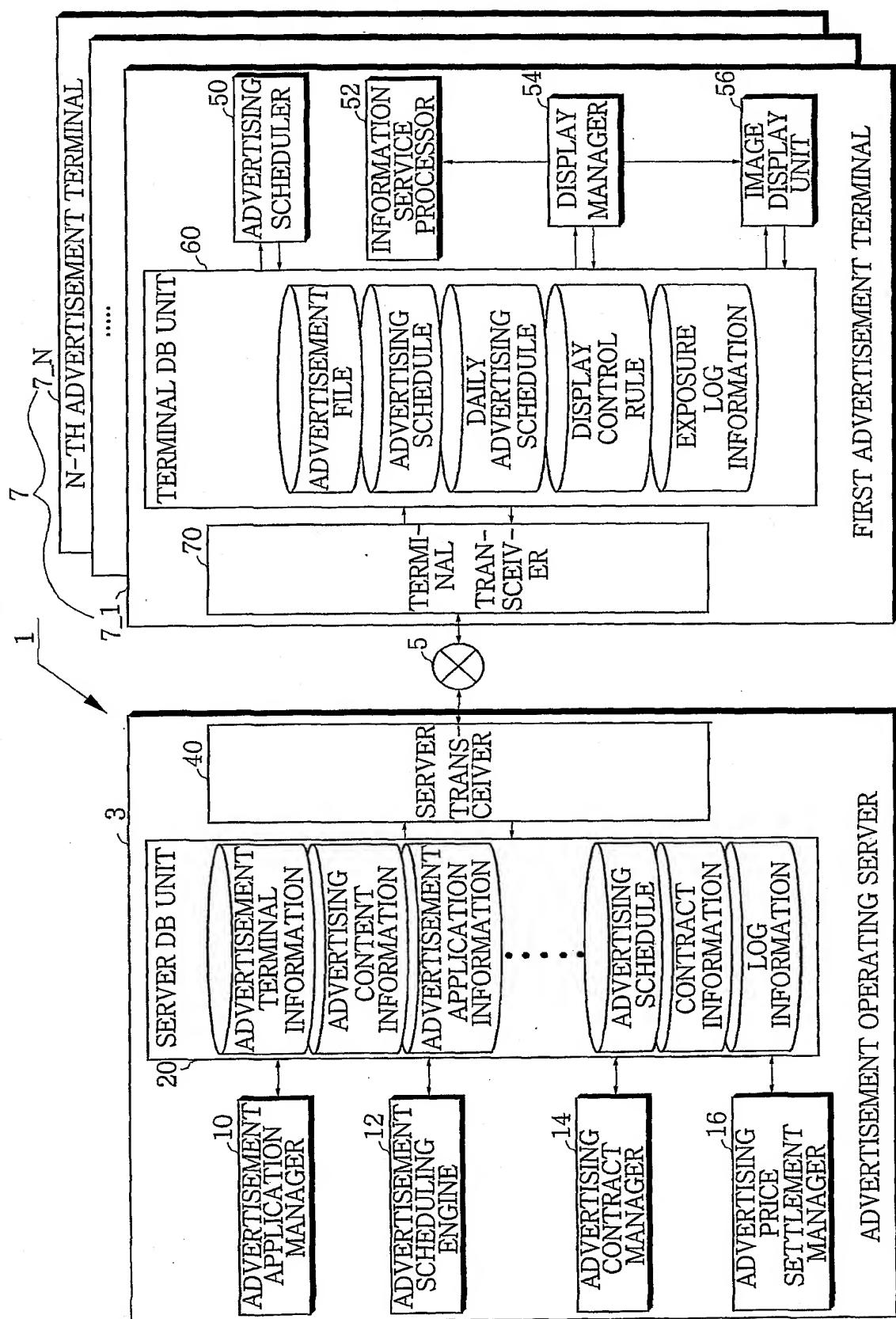
15 step (h) in which the advertisement operating server generates result information of settlement by comparing planned number of exposures according to the advertising schedule with the log information which is received from each advertisement terminal having exposed the advertisement.

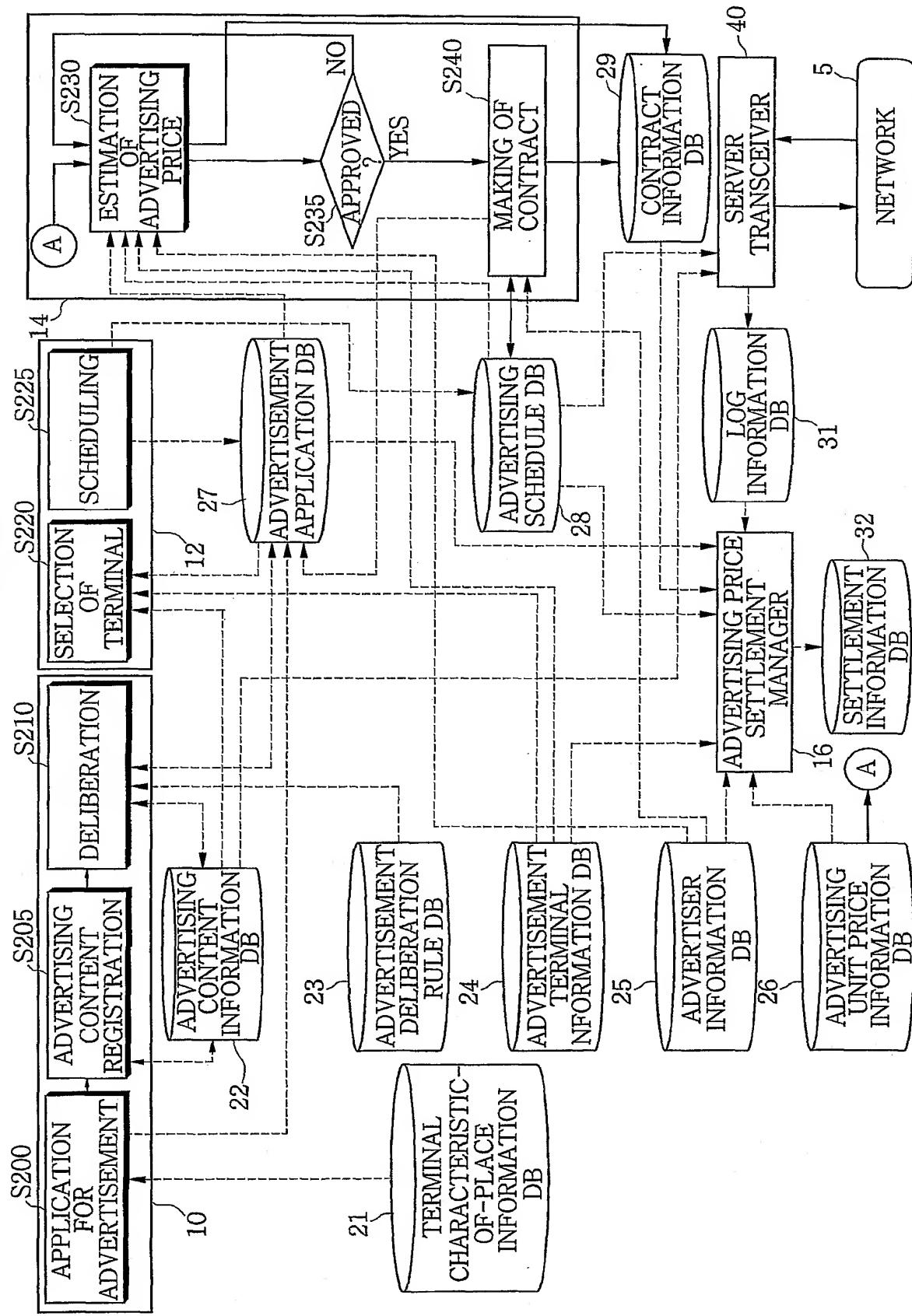
9. The operating method of claim 7, further comprising providing the advertisement file to a deliberator and receiving the result of deliberation from the deliberator, after step (a).

20

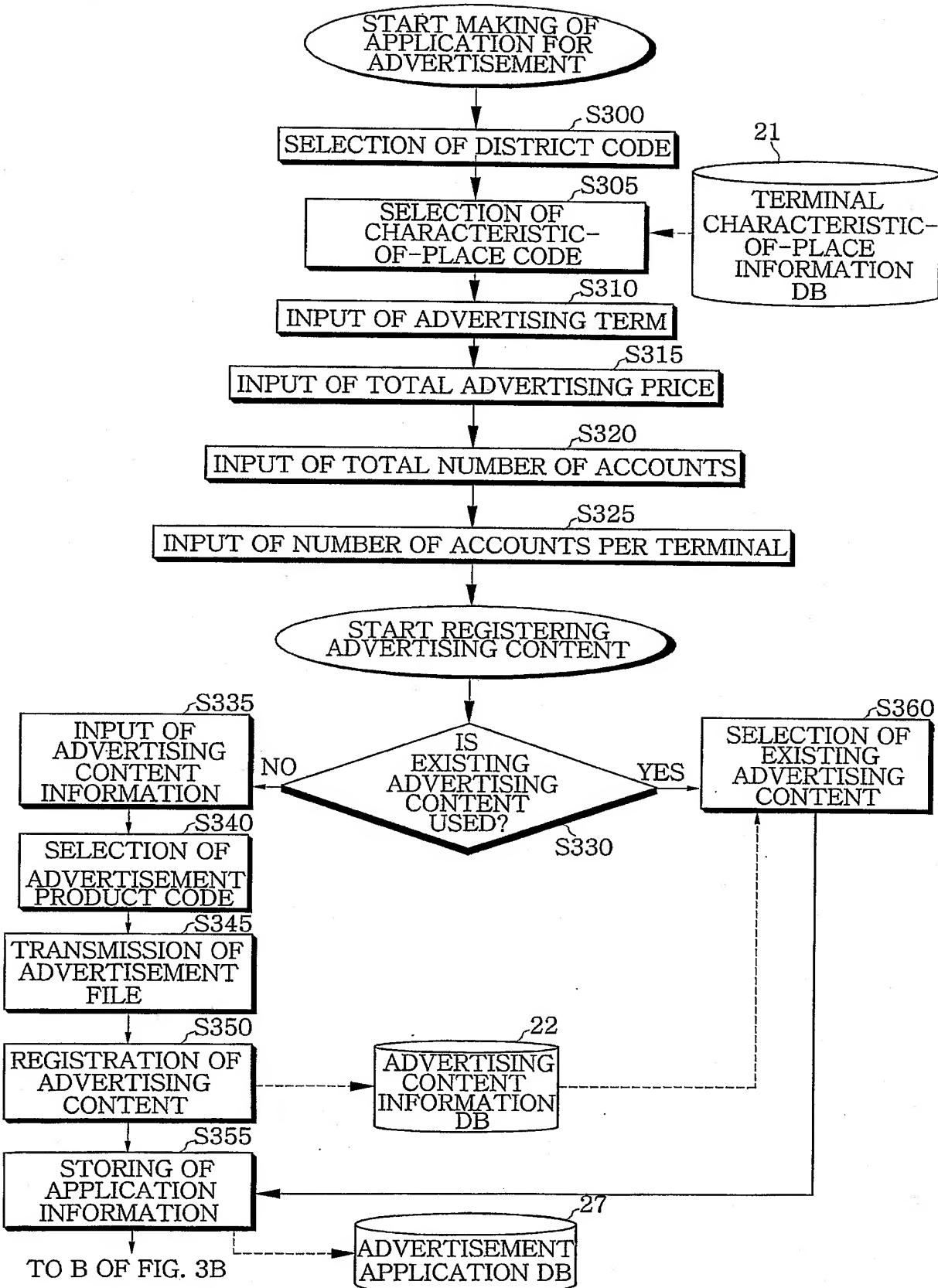
10. The operating method of claim 7, wherein step (b) comprises repeating allocation of at least the minimum number of exposures to each advertisement terminal available during the advertising term among the selected advertisement terminals, and terminating the repetition when an advertising price accumulated during the repetition exceeds a total advertising price included in an advertisement application or when planned number of exposures accumulated during the repetition exceeds a total number of exposures.

25

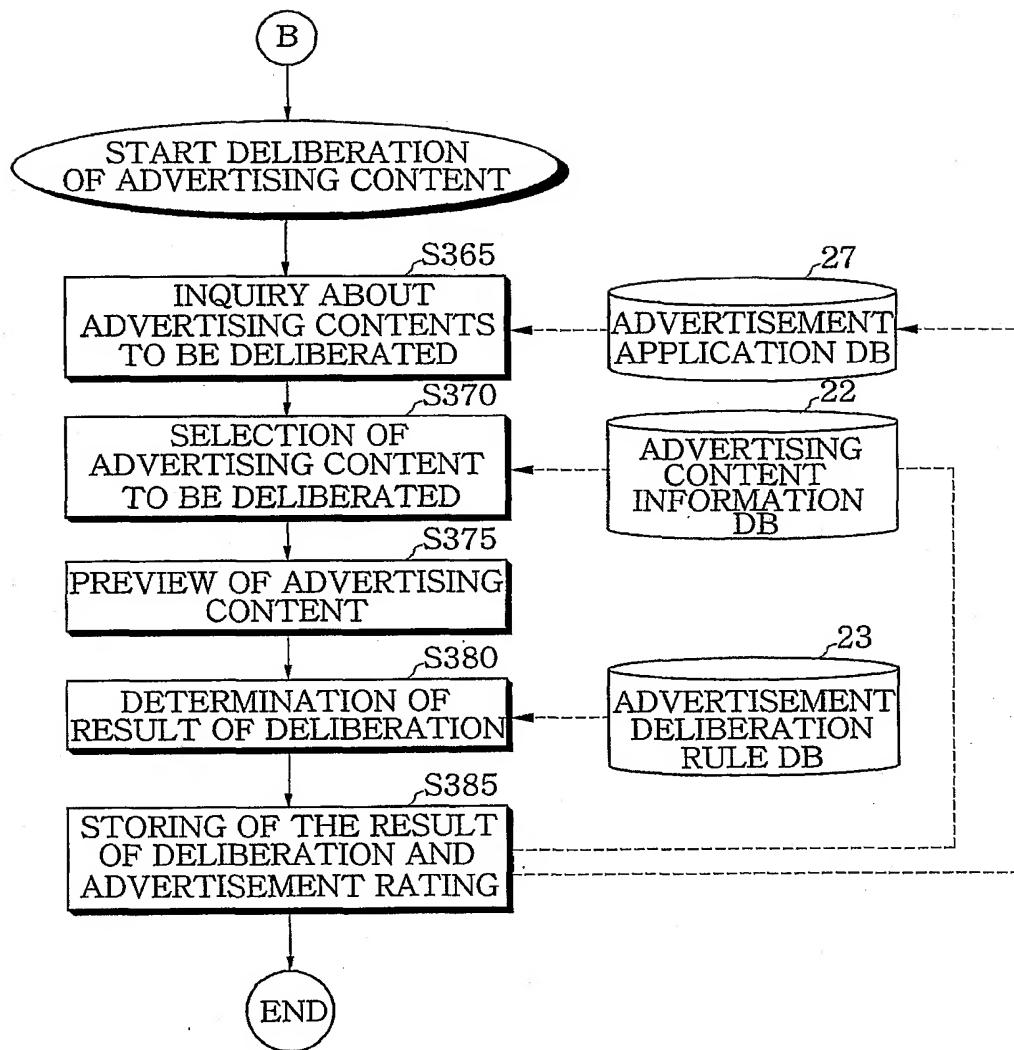
**FIG. 1**

**FIG. 2**

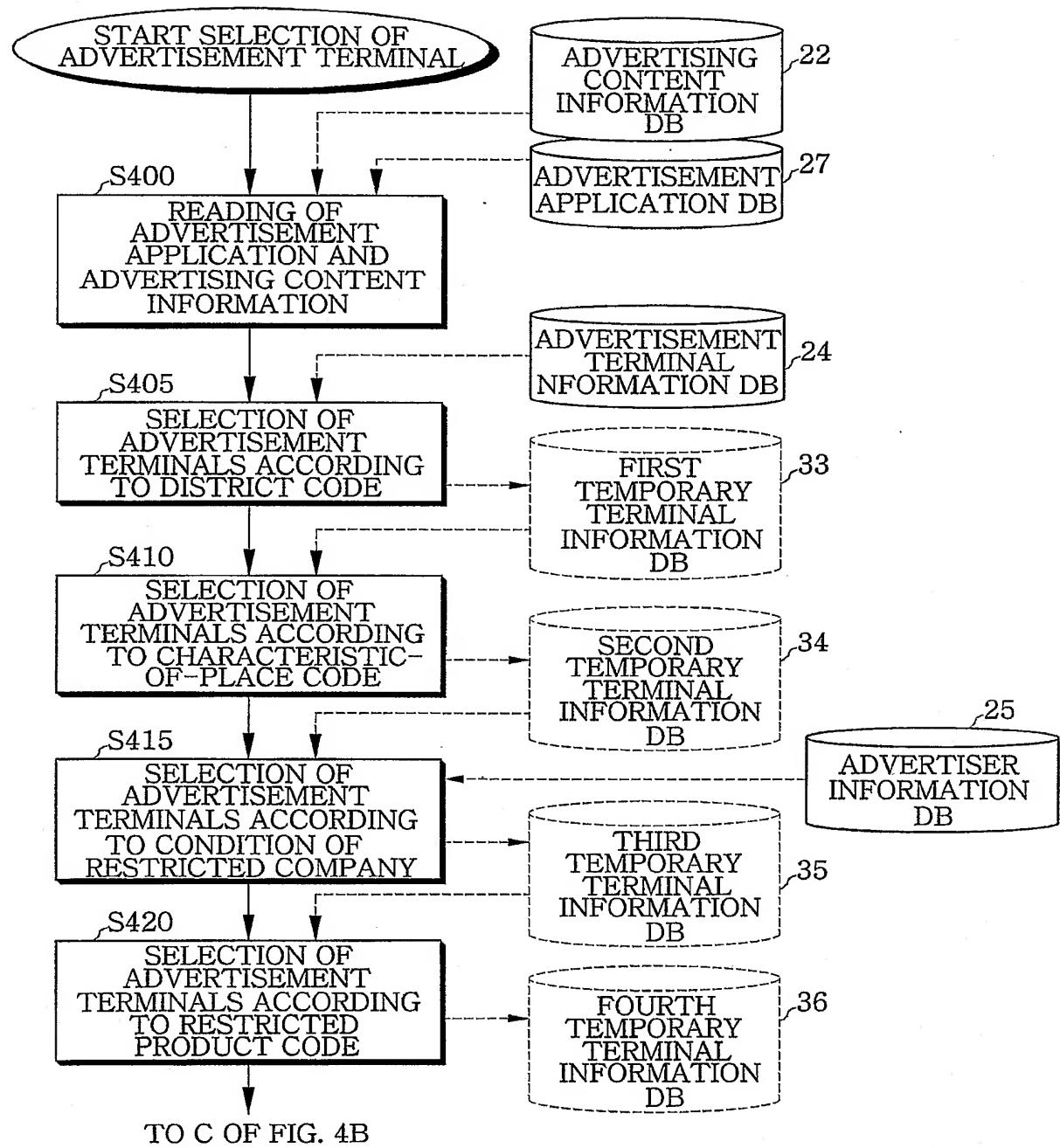
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**FIG.3A**

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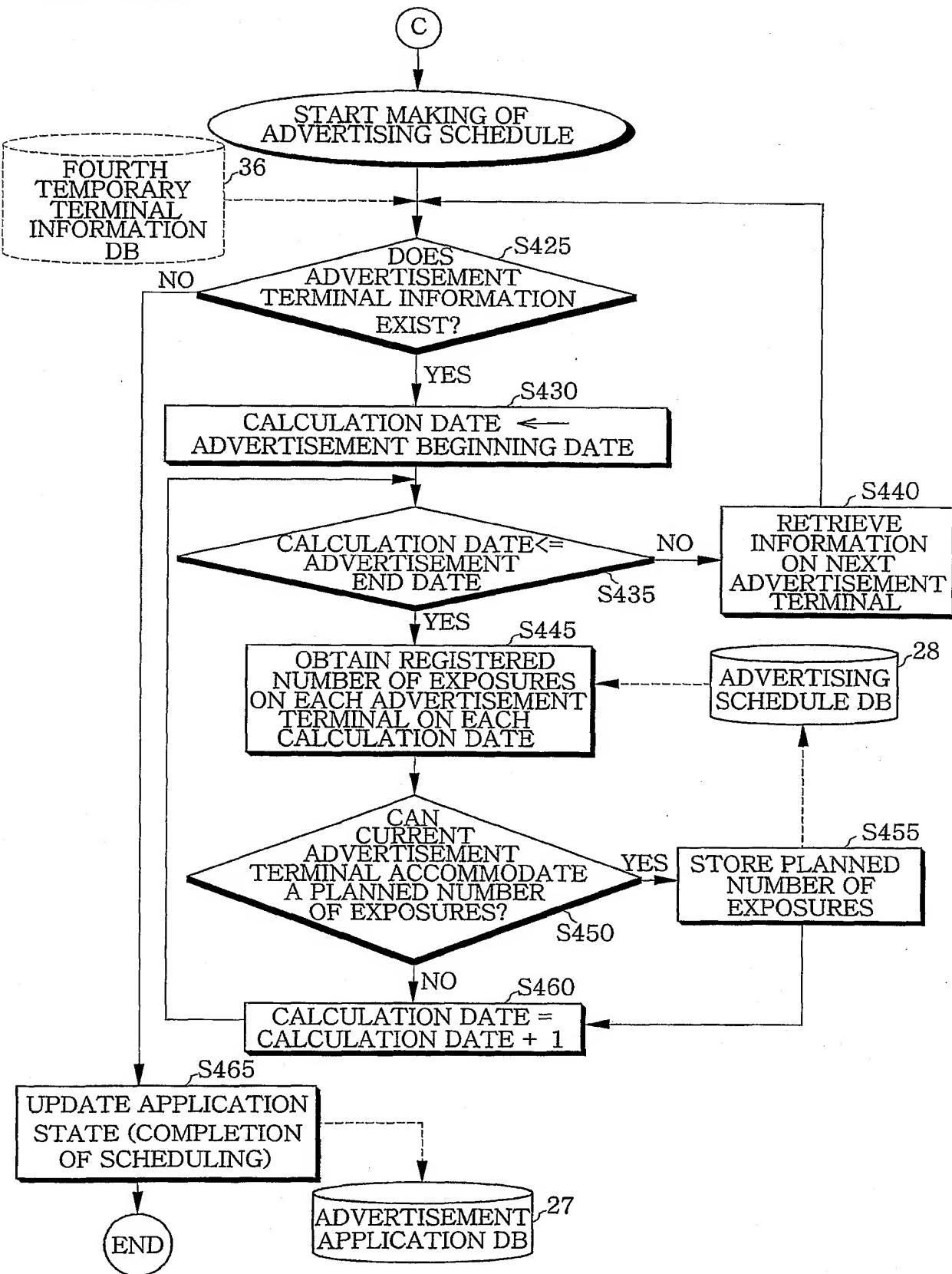
**FIG.3B**

**FIG.4A**

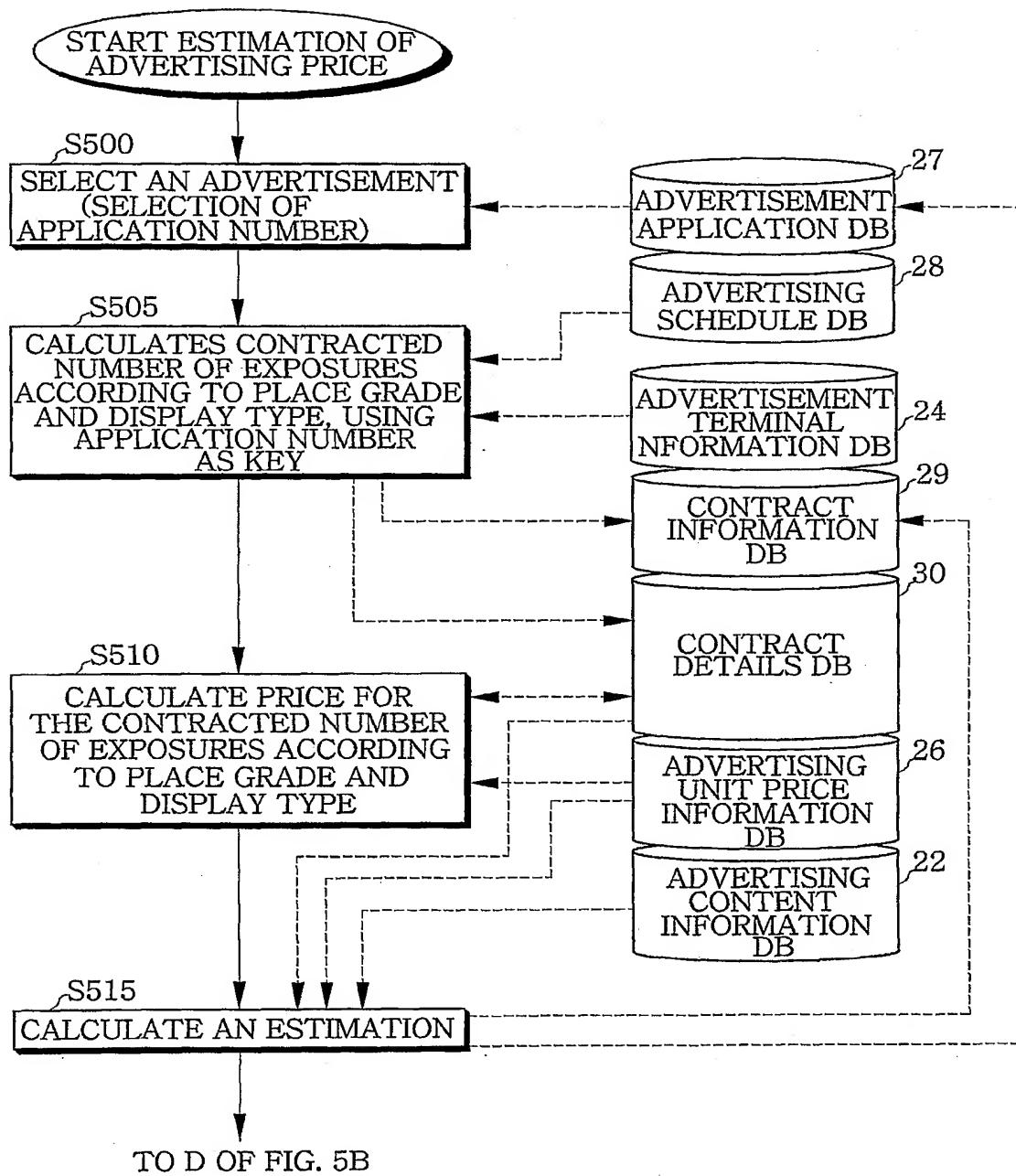


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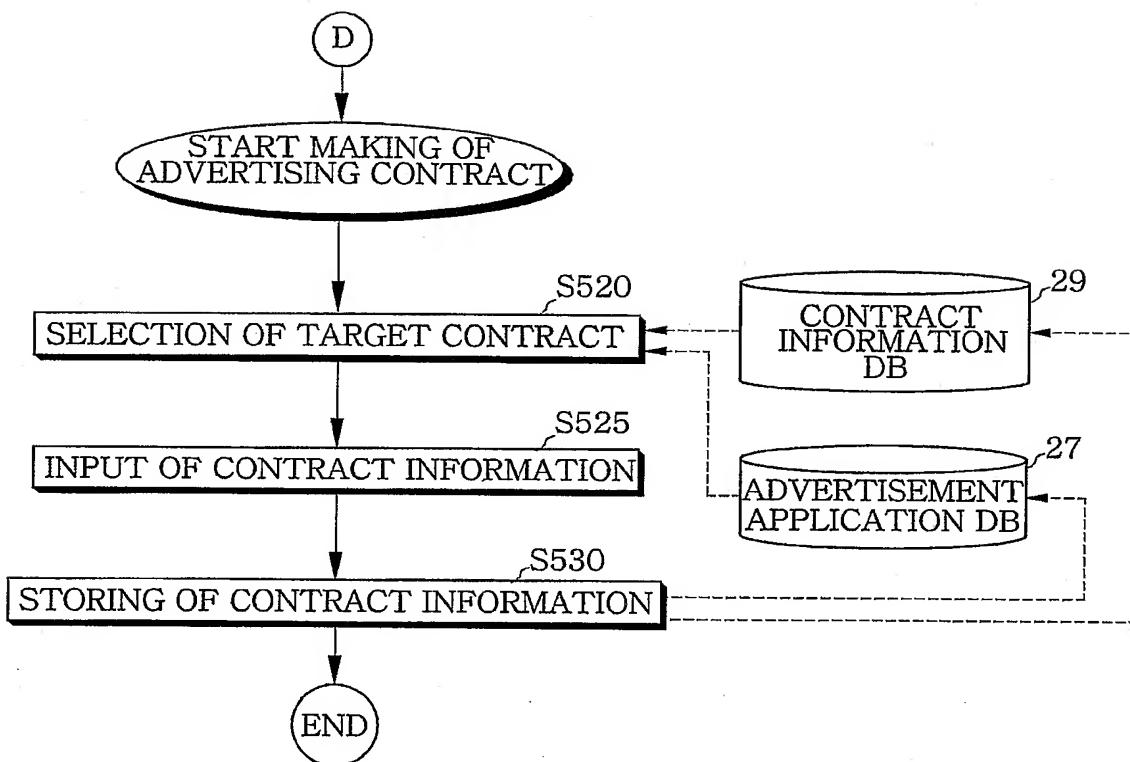
FIG.4B



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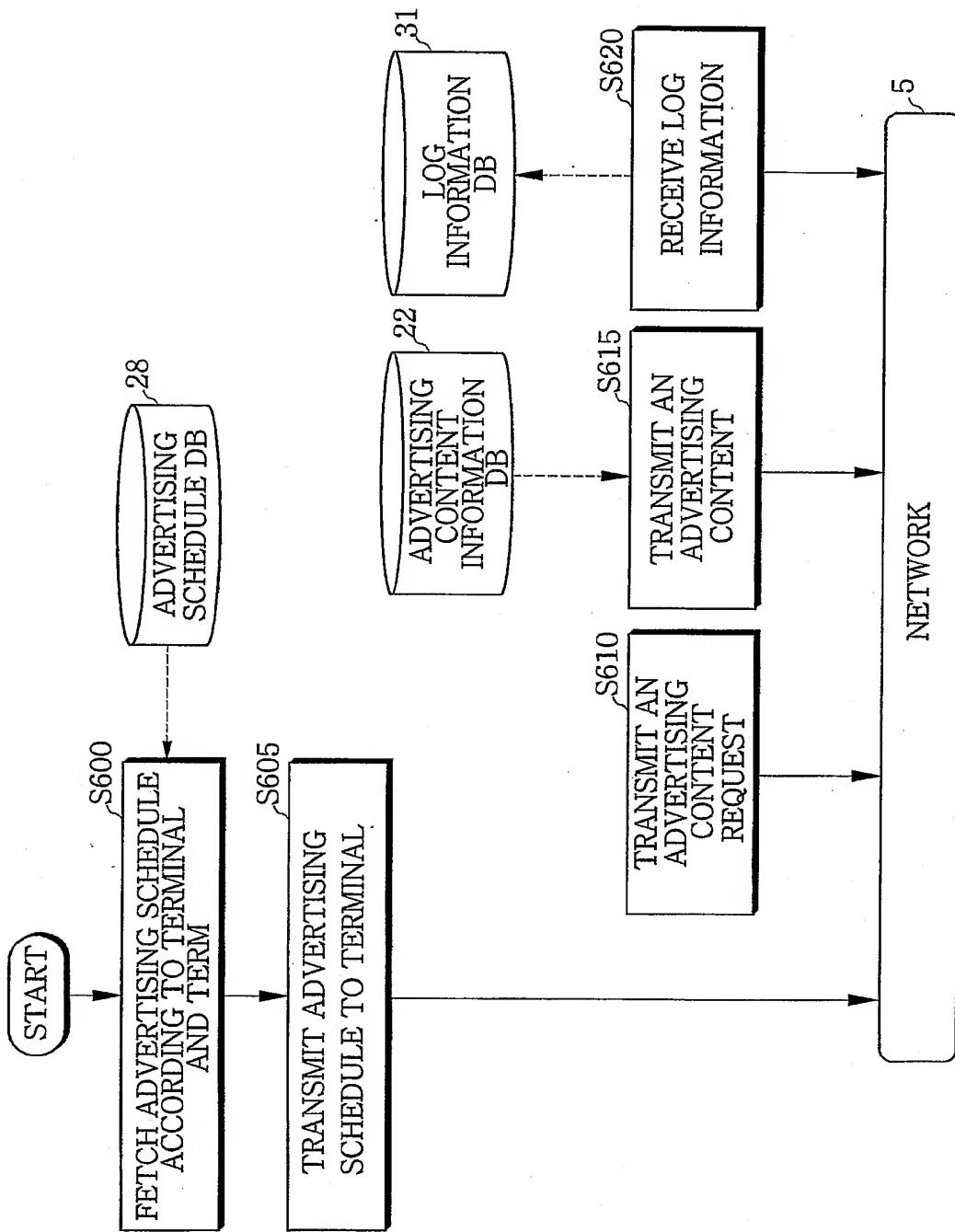
**FIG.5A**

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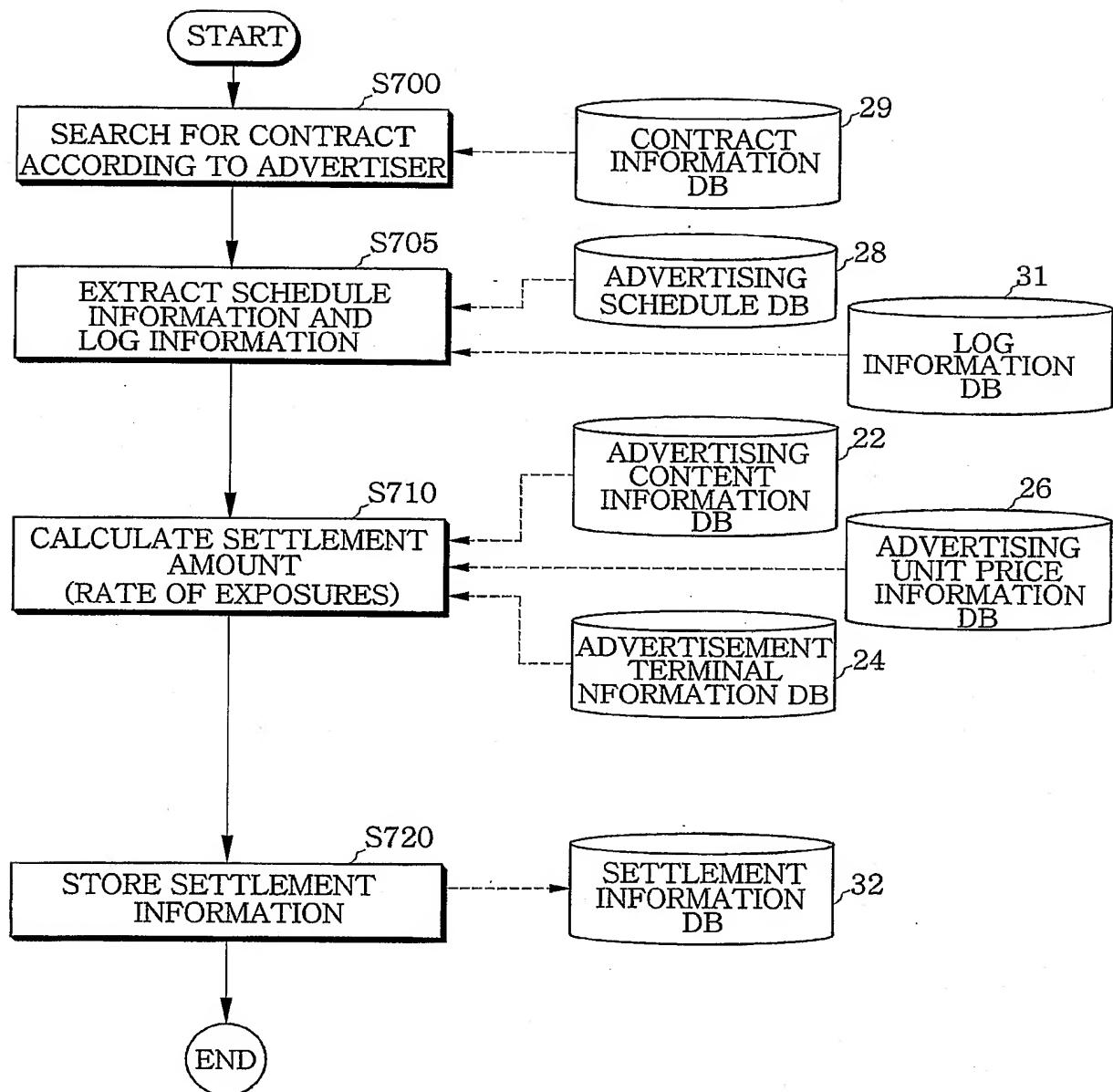
**FIG.5B**

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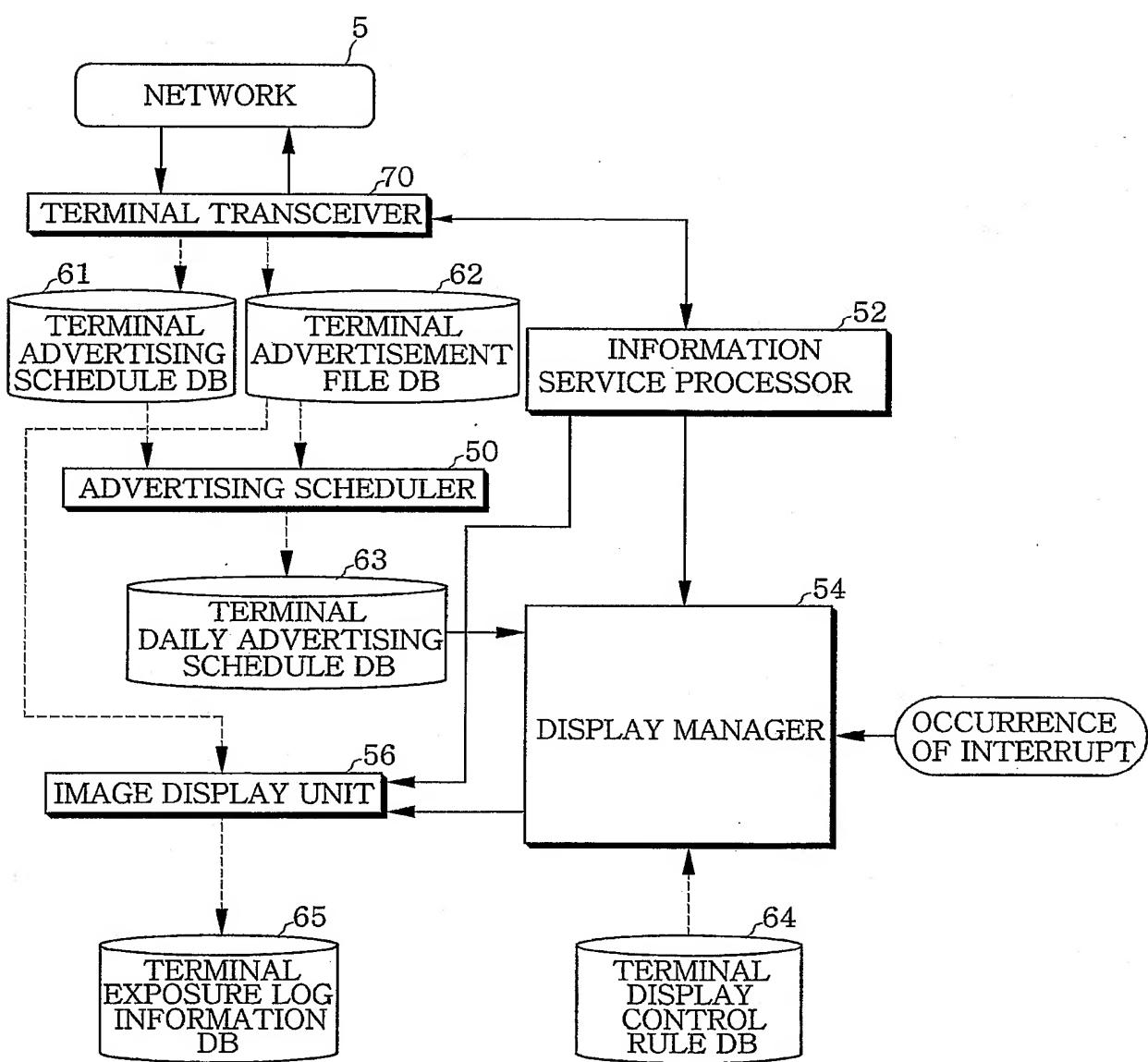
## FIG. 6



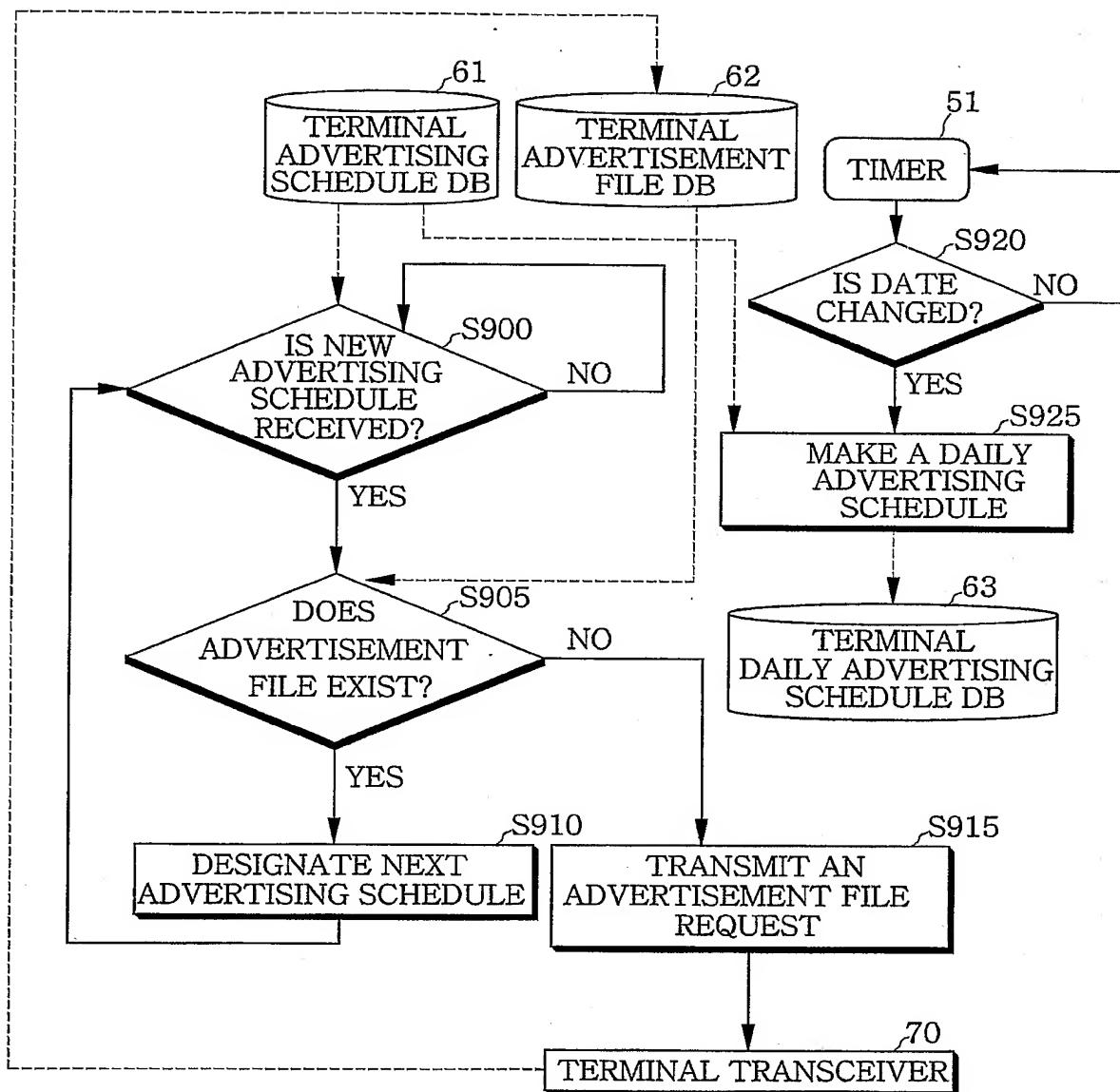
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**FIG.7**

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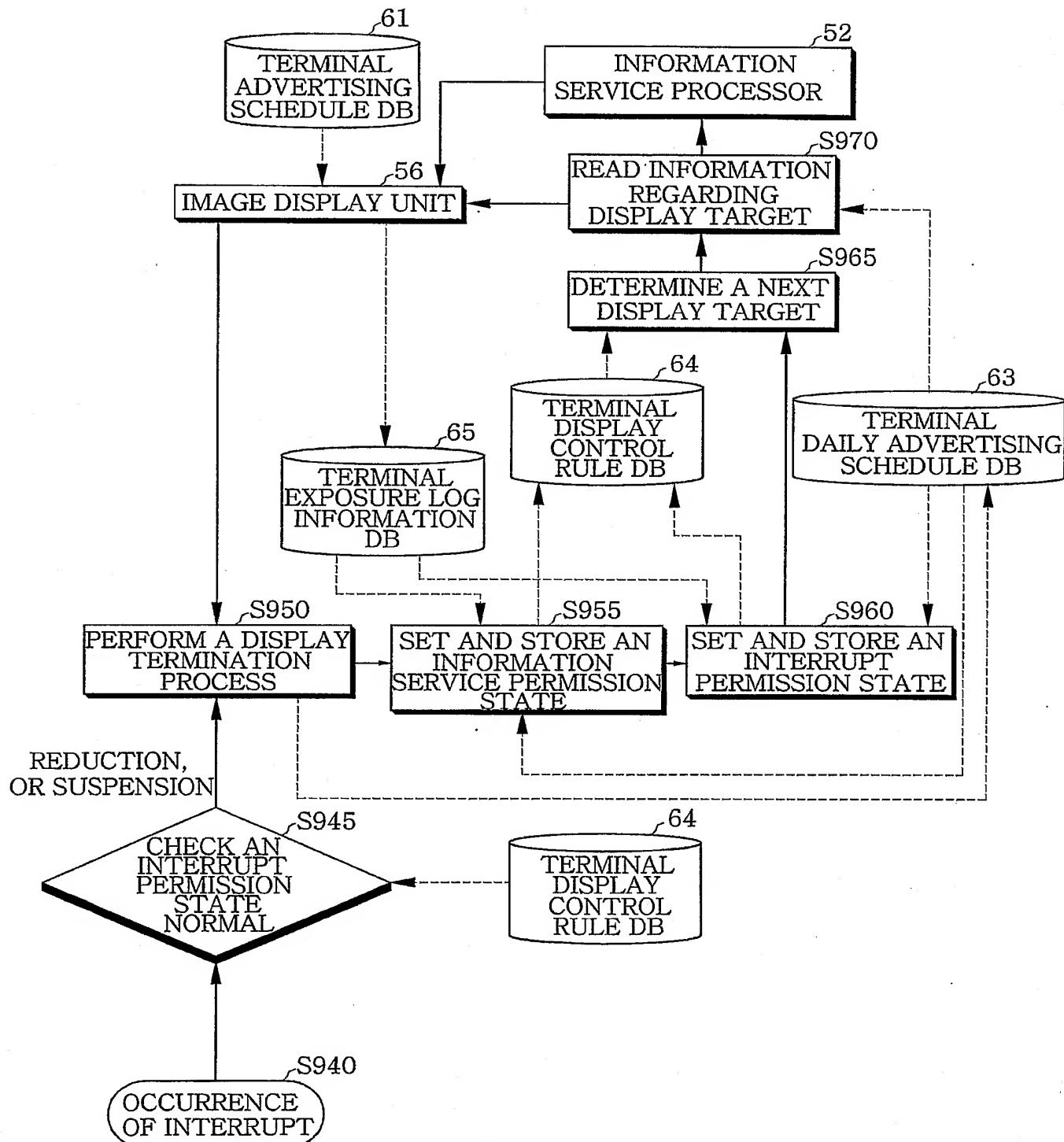
**FIG.8**

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**FIG.9**

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**FIG. 10**



# INTERNATIONAL SEARCH REPORT

ational application No.  
PCT/KR02/01785

## A. CLASSIFICATION OF SUBJECT MATTER

IPC7 G06F 17/60

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)

IPC7 G06F17/60

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched  
Korean patents and applications for inventions since 1975

Electronic data base consulted during the international search (name of data base and, where practicable, search terms used)

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
Y	WO 97-21183 A (BELL COMMUNICATIONS RESEARCH INC.) 12 JUN. 1997 SEE THE WHOLE DOCUMENTS	1-10
A	KR 2000-36762 A (KIM GI-HOEING) 5 JUL. 2000 SEE THE WHOLE DOCUMENTS	1-10
A	KR 2000-63868 A (JUNG BYUNG-JOO) 6 NOV. 2000 SEE THE WHOLE DOCUMENTS	1-10
A	KR 2001-25698 A (KIM HYUNG TAE ETR.) 6 APR. 2001 SEE THE WHOLE DOCUMENTS	1-10

Further documents are listed in the continuation of Box C.

See patent family annex.

* Special categories of cited documents:	
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"L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of citation or other special reason (as specified)	"Y" document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art
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"P" document published prior to the international filing date but later than the priority date claimed	

Date of the actual completion of the international search	Date of mailing of the international search report
10 JUNE 2003 (10.06.2003)	11 JUNE 2003 (11.06.2003)
Name and mailing address of the ISA/KR  Korean Intellectual Property Office 920 Dunsan-dong, Seo-gu, Daejeon 302-701, Republic of Korea Facsimile No. 82-42-472-7140	Authorized officer JEONG, Jae Hoon Telephone No. 82-42-481-5787 